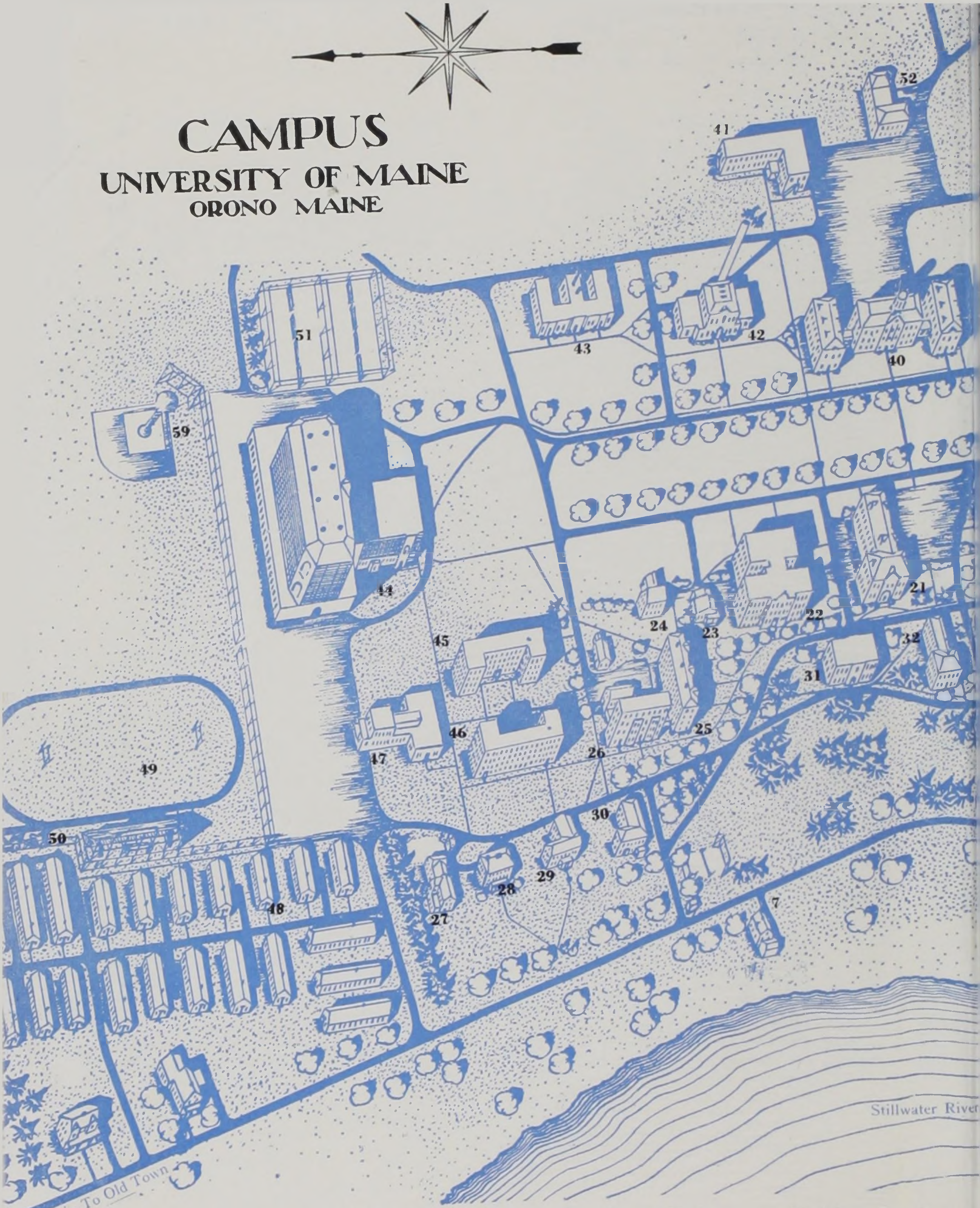
1948

Catalog for 1947-48, Announcements 1948-49

University of Maine

CAMPUS
UNIVERSITY OF MAINE
ORONO MAINE



LEGEND

1. Phi Kappa Sigma
2. Lambda Chi Alpha
3. Sigma Chi
4. Phi Eta Kappa
5. Kappa Sigma
6. Delta Tau Delta
7. Residences
8. Sigma Alpha Epsilon
9. Heating Plant
10. Home Mgt. House
11. Women's Athletic Facilities
12. New Dormitory
13. Estabrooke Hall
14. Colvin Hall
15. Merrill Hall
16. Maples
17. Winslow Hall
18. Fire House
19. Holmes Hall
20. Alumni Hall
21. Lord Hall
22. Aubert Hall
23. Print Shop
24. MCA Building
25. Oak Hall
26. Hannibal Hamlin Hall
27. Infirmary
28. Sigma Nu
29. Theta Chi
30. Beta Theta Pi
31. Wingate Hall
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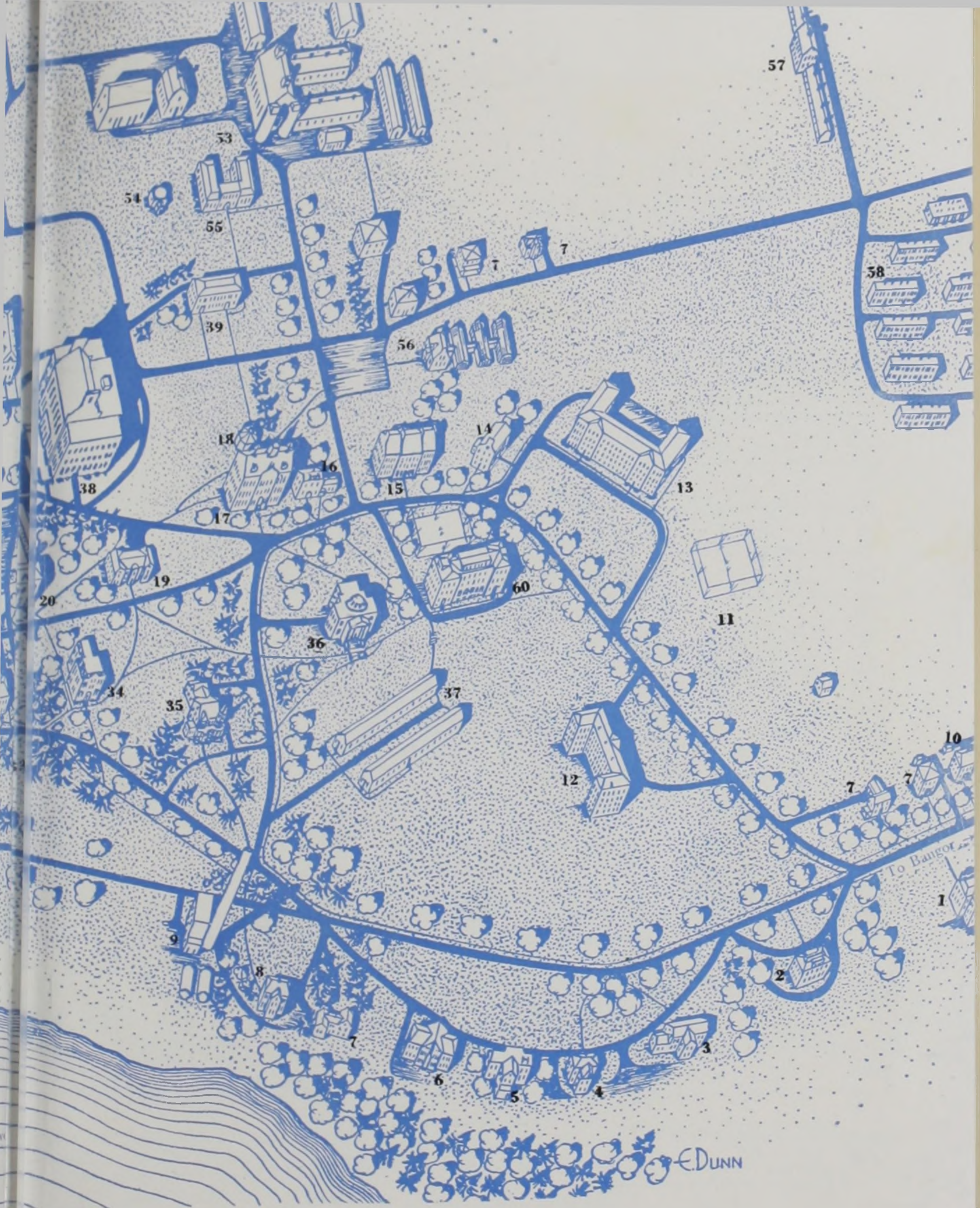

2. Fernald Hall
3. Proposed Site of Union Bldg.
4. Coburn Hall
5. President's House
6. Carnegie Hall
7. East and West Halls
8. Library
9. Rogers Hall
40. Stevens Hall (North and South Stevens)
41. East Annex
42. Crosby Laboratory
43. Mechanical Shop
44. Alumni Mem. Gym. and Field House
45. Corbett Hall
46. Dunn Hall
47. Men's Dining Hall
48. North Dorms
49. Football Field and Track
50. Grandstand
51. Tennis Courts
52. Carpenter Shop
53. Univ. Farm Bldgs.
54. Observatory
55. Agricultural Engineering
56. Horticulture and Greenhouse Bldgs.
57. Experiment Station Poultry Plant
58. South Apartments
59. Baseball Field
60. Balentine Hall

THE MAINE BULLETIN

UNIVERSITY OF MAINE
ORONO MAINE

CATALOG FOR 1947-48

ANNOUNCEMENTS 1948-49

Vol. L JANUARY, 1948 No. 6
Published by the University of Maine
Issued monthly in August, September, October, November, December, January, April, and May, twice in February, and three times in March.
Entered at the Orono Post Office as second-class matter.

CALENDAR FOR 1947–48

Fall 1947

		1947
Freshman Week Registration	Tues., 8:00 A.M.-12 M.	Sept. 30
Registration of Upperclass Students	Wed., 1:30-4:30 P.M.	Oct. 1
	Thurs., 8:00 A.M.-12 M., 1:30-4:30 P.M.	Oct. 2
	Fri., 8:00 A.M.-12 M., 1:30-4:30 P.M.	Oct. 3
	Sat., 8:00 A.M.-12 M.	Oct. 4
Classes begin	Mon., 7:45 A.M.	Oct. 6
Freshman reports due	Tues.	Nov. 4
Thanksgiving recess begins	Wed., 11:35 A.M.	Nov. 26
Thanksgiving recess		
Instruction resumed	Mon., 7:45 A.M.	Dec. 1
Midsemester reports due (covering the first half semester to Dec. 5)	Tues. on or before 5:00 P.M.	Dec. 9
Christmas recess begins	Sat., 11:35 A.M.	Dec. 20
Christmas recess		
		1948
Instruction resumed	Tues., 7:45 A.M.	Jan. 6
Classes end	Sat., 12:35 P.M.	Jan. 31
Registration	Mon. & Tues.	Feb. 2, 3
Final Examinations begin	Wed., 8:00 A.M.	Feb. 4
Examinations end. Semester ends	Fri.	Feb. 13
Registration of former students	Sat., 8:00-12 M.	Feb. 14

Spring 1948

Classes begin	Mon., 7:45 A.M.	Feb. 16
Winter Carnival, a holiday	Sat.	Feb. 21
Written Comprehensive Examinations—Arts and Sciences	Sat.	Mar. 20
Spring Recess begins	Fri., 11:35 A.M.	Apr. 2
Spring Recess		
Instruction resumed	Tues., 7:45 A.M.	Apr. 13
Midsemester reports due (covering the first 8 weeks to Friday, April 16)	Tues., on or before 5:00 P.M.	Apr. 20
Oral Comprehensive Examinations—Arts and Sciences	Mon.-Sat.	Apr. 26-May 1
Classes end	Sat.	June 5
Final Examinations begin	Mon., 8:00 A.M.	June 7
Examinations end	Wed.	June 16
Class Day	Fri.	June 18
Alumni Day	Sat.	June 19
Baccalaureate Exercises	Sun., 10:30 A.M.	June 20
Commencement Exercises	Sun., 2:30 P.M.	June 20

Summer Camps

Civil Engineering Camp begins	Mon.	June 21
Civil Engineering Camp ends	Sat.	July 31
Forestry Junior Camp begins	Mon.	June 21
Forestry Junior Camp ends	Sat.	Aug. 28
Forestry Freshman Camp begins	Mon.	Aug. 30
Forestry Freshman Camp ends	Sat.	Sept. 11

Summer Session

Registration	Mon., 8:00-12 M. 1:30-4:30 P.M.	June 28
Classes begin	Tues.	June 29
Session ends	Fri.	Aug. 6

1948

JANUARY

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JANUARY

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AUGUST

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NOVEMBER

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DECEMBER

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CALENDAR FOR 1948–49

Fall 1948

		1948
Freshman Week Registration	Tues., 8:00 A.M.	Sept. 14
Registration of Upperclass Students	Thurs., 8:00-12 M., 1:30-4:30 P.M.	Sept. 16
	Fri., 8:00-12 M. 1:30-4:30 P.M.	Sept. 17
	Sat., 8:00-12 M.	Sept. 18
Classes begin	Mon., 7:45 A.M.	Sept. 20
Freshman reports due	Tues.	Oct. 19
Midsemester reports due (covering the first half semester to Nov. 13)	Tues. on or before 5:00 P.M.	Nov. 16
Thanksgiving recess begins	Wed., 11:35 A.M.	Nov. 24
Thanksgiving recess		
Instruction resumed	Mon., 7:45 A.M.	Nov. 29
Christmas recess begins	Sat., 11:35 A.M.	Dec. 18
Christmas recess		
		1949
Instruction resumed	Tues., 7:45 A.M.	Jan. 4
Classes end	Sat.	Jan. 22
Registration	Mon. & Tues.	Jan. 24, 25
Final Examinations begin	Wed., 8:00 A.M.	Jan. 26
Examinations end. Semester ends	Fri.	Feb. 4
Registration of former students	Sat., 8:00-12 M.	Feb. 5

Spring 1949

Classes begin	Mon., 7:45 A.M.	Feb. 7
Washington's Birthday, a holiday	Tues.	Feb. 22
Written Comprehensive Examinations—Arts and Sciences	Sat.	Mar. 12
Spring Recess begins	Fri., 11:35 A.M.	Mar. 25
Spring Recess		
Instruction resumed	Tues., 7:45 A.M.	Apr. 5
Midsemester reports due (covering the first half semester to Friday, Apr. 8)	Tues. on or before 5:00 P.M.	Apr. 12
Oral Comprehensive Examinations—Arts and Sciences	Mon.-Sat.	Apr. 18-23
Classes end	Sat.	May 28
Final Examinations begin	Mon., 8:00 A.M.	May 30
Examinations end	Wed.	June 8
Class Day	Fri.	June 10
Alumni Day	Sat.	June 11
Baccalaureate Exercises	Sun., 10:30 A.M.	June 12
Commencement Exercises	Sun., 2:30 P.M.	June 12

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Forestry Junior Camp ends	Sat.	Aug. 20
Forestry Freshman Camp begins	Mon.	Aug. 29
Forestry Freshman Camp ends	Sat.	Sept. 10

Summer Session

Registration	Tues., 8:00-12 M., 1:30-4:30 P.M.	July 5
Classes begin	Wed.	July 6
Session ends	Fri.	Aug. 12

CORRESPONDENCE

Inquiries should be directed as indicated below:

General administrative matters . . . . . President, Arthur A. Hauck

Scholarship records . . . . . Registrar, James A. Gannett

Admission to the freshman class and to advanced standing . . . . . Director of Admissions, Percy F. Crane

Financial affairs of students . . . . . Treasurer, Frederick S. Youngs

College of Agriculture . . . . . Dean of the College, Arthur L. Deering

College of Arts and Sciences . . . . . Dean of the College, Joseph M. Murray

College of Technology . . . . . Dean of the College, Paul Cloke

School of Education . . . . . Dean of the School, Mark R. Shibles

Graduate study and scholarships available for graduate students . . . . . Dean of Graduate Study, Edward N. Brush

Summer Session for teachers and college students, and Extension and Correspondence Courses . . . . . Director, Mark R. Shibles

Student and alumni employment . . . . . Placement Director, Philip J. Brockway

Dormitory rooms for women . . . Assistant to the Housing Manager, Velma K. Oliver

Dormitory rooms for men, rooms in private homes, and apartments . . . . . Housing Manager, Raymond P. Thomas

TABLE OF CONTENTS

BOARD OF TRUSTEES

EDWARD EVERETT CHASE, B.A., President	
Residence: 26 Stonybrook Road, Cape Elizabeth	
Business: 465 Congress St., Portland 2	
Term expires January 22, 1950	
HARLAND A. LADD, B.A., M.A., ex officio	State House, Augusta
RAYMOND WEBBER DAVIS, B.A.	Guilford
Term expires July 18, 1949	
WILLIAM STOCKDALE NUTTER, M.A.	Sanford
Term expires June 5, 1950	
HAROLD MERLE PIERCE, B.A.	P.O. Box 58, Bangor
Term expires August 9, 1948	
GEORGE SETH WILLIAMS	9 Green Street, Augusta
Term expires December 3, 1954	
FRANK WASHBURN HUSSEY, B.S.	Presque Isle
Term expires May 9, 1948	
ALBERT KINSMAN GARDNER, B.S.	Orono
Term expires October 17, 1953	
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OFFICERS OF ADMINISTRATION

OFFICERS OF THE UNIVERSITY

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ASSISTANT TO THE PRESIDENT. Charles Edward Crossland, 44 Library.
DEAN OF MEN. Elton Ewart Wieman, 207 Library.
ASSISTANT TO THE DEAN OF MEN. Robert Clifton Worrick, 207 Library.
DEAN OF WOMEN. Edith Grace Wilson, 74 Library.
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ASSISTANT REGISTRAR. Evelyn Taylor, Alumni Hall.
RECORDER, Addie Matilda Weed, Alumni Hall.
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LIBRARIAN. Louis Tappe Ibbotson, Library.
TREASURER. Frederick Shaw Youngs, Alumni Hall.
BUSINESS MANAGER AND PURCHASING AGENT. Henry Leroy Doten, Alumni Hall.
ACCOUNTANT. Irving Pierce, Alumni Hall.
MANAGER OF DORMITORIES. William Carl Wells, New Cafeteria.
EXECUTIVE SECRETARY, GENERAL ALUMNI ASSOCIATION. John Clifford Sealey, Jr., 44 Library.
DIRECTOR OF PLACEMENT BUREAU AND ASSISTANT SECRETARY, GENERAL ALUMNI ASSOCIATION. Philip Judd Brockway, 76 Library.
DIRECTOR OF PUBLICITY AND EDITOR OF UNIVERSITY PUBLICATIONS. Howard Arthur Keyo, 210 Library.

OFFICERS OF DIVISIONS OF THE UNIVERSITY

COLLEGE OF AGRICULTURE. Arthur Lowell Deering, Dean, 16 Winslow Hall.
COLLEGE OF ARTS AND SCIENCES. Joseph Magee Murray, Dean, 100 Stevens Hall.
SCHOOL OF EDUCATION. Mark Richard Shibles, Dean, 20 Stevens Hall, South.
COLLEGE OF TECHNOLOGY. Paul Cloke, Dean, 12 Wingate Hall.
GRADUATE STUDY. Edward Newcomb Brush, Dean, 43 Stevens Hall, North.
SUMMER SESSION. Mark Richard Shibles, Director, 20 Stevens Hall, South.
AGRICULTURAL EXTENSION SERVICE. Arthur Lowell Deering, Director, 16 Winslow Hall.
MAINE AGRICULTURAL EXPERIMENT STATION. Fred Griffee, Director, Holmes Hall.
TECHNOLOGY EXPERIMENT STATION. Paul Cloke, Director, 12 Wingate Hall.

OFFICERS OF THE DEPARTMENTS

AGRICULTURAL ECONOMICS AND FARM MANAGEMENT. Professor Merchant, 36 Winslow Hall.
AGRICULTURAL ECONOMICS (AGRICULTURAL EXPERIMENT STATION). Agricultural Economist Merchant, 36 Winslow Hall.
AGRICULTURAL EDUCATION. Assistant Professor Elliott, 22 Agricultural Engineering Building.
AGRONOMY AND AGRICULTURAL ENGINEERING. Professor Libby, 2 Agricultural Engineering Building.
AGRONOMY AND AGRICULTURAL ENGINEERING (AGRICULTURAL EXPERIMENT STATION). Agronomist Libby, 2 Agricultural Engineering Building.
ANIMAL INDUSTRY. Professor Dickey, 27 Rogers Hall.

ANIMAL INDUSTRY (AGRICULTURAL EXPERIMENT STATION). Animal Husbandman Dickey, 27 Rogers Hall.
*ART. Mr. H. R. Smith.
BACTERIOLOGY AND BIOCHEMISTRY. Professor Hitchner, 13 Winslow Hall.
BOTANY AND ENTOMOLOGY. Professor Steinmetz, 24 Coburn Hall.
CHEMISTRY. Professor Douglass, 263 Aubert Hall.
CHEMISTRY (AGRICULTURAL EXPERIMENT STATION). Chemist Tobey, Holmes Hall.
CHEMICAL ENGINEERING. Professor Jenness, 162 Aubert Hall.
CIVIL ENGINEERING. Professor Evans, 21 Wingate Hall.
ECONOMICS AND SOCIOLOGY. Professor Kirshen, 46 Stevens Hall, South.
EDUCATION. Professor Shibles, 20 Stevens Hall, South.
ELECTRICAL ENGINEERING. Professor Creamer, 2 Lord Hall.
ENGINEERING DRAFTING. Professor Kent, 102A Library.
ENGLISH. Professor Turner, 225 Stevens Hall.
ENTOMOLOGY (AGRICULTURAL EXPERIMENT STATION). Entomologist Lathrop, Holmes Hall.
FORESTRY. Professor Ashman, 26 Winslow Hall.
FORESTRY (AGRICULTURAL EXPERIMENT STATION). Forester Ashman, 26 Winslow Hall.
HISTORY AND GOVERNMENT. Professor E. F. Dow, 145 Stevens Hall.
HOME ECONOMICS. Professor Greene, 24 Merrill Hall.
HORTICULTURE. Professor Waring, Horticulture Greenhouse.
HORTICULTURE (AGRICULTURAL EXPERIMENT STATION). Associate Horticulturist Hitz.
INDUSTRIAL COOPERATION. Acting Director Jenness, 162 Aubert Hall.
MATHEMATICS AND ASTRONOMY. Professor Kimball, 135 Stevens Hall.
MECHANICAL ENGINEERING. Professor H. D. Watson, 1 Lord Hall.
MILITARY SCIENCE AND TACTICS. Professor Fuller, Armory.
MODERN LANGUAGES AND CLASSICS. Professor Starr, 1 Stevens Hall, North.
MUSIC. Professor Sprague, 15 Stevens Hall, North.
PHILOSOPHY. Professor Levinson, 335 Stevens Hall.
PHYSICAL EDUCATION AND ATHLETICS. Dean Wieman, 207 Library.
PHYSICS. Professor Bennett, 200 Aubert Hall.
PLANT PATHOLOGY (AGRICULTURAL EXPERIMENT STATION). Plant Pathologist Folsom, Holmes Hall.
POULTRY HUSBANDRY. Professor Smyth, Poultry Building.
POULTRY HUSBANDRY (AGRICULTURAL EXPERIMENT STATION). Poultry Husbandman Smyth, Poultry Building.
PSYCHOLOGY. Associate Professor Glanville, 31 Stevens Hall, North.
SHORT COURSES. Director Loring, 11A Winslow Hall.
SPEECH. Professor Runion, 350 Stevens Hall.
ZOOLOGY. Professor Speicher, 16 Coburn Hall.

MAJOR ADMINISTRATIVE ASSISTANTS

PRESIDENT'S OFFICE. Florence Elizabeth Dinsmore, Secretary to the President, Alumni Hall.

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* On leave of absence.

DEAN'S OFFICE, COLLEGE OF AGRICULTURE. Yvonne Morin, Secretary to the Dean, 16 Winslow Hall.

DEAN'S OFFICE, COLLEGE OF ARTS AND SCIENCES. Pauline E. Willett, Secretary to the Dean, 100A Stevens Hall.

DEAN'S OFFICE, SCHOOL OF EDUCATION. Thelma Demont, Secretary to the Dean, 22 Stevens Hall, South.

DEAN'S OFFICE, COLLEGE OF TECHNOLOGY. Alta Claire Clifford, Secretary to the Dean, 12 Wingate Hall.

DEAN OF MEN'S OFFICE. Prudence Stormann, Secretary to the Dean, 207 Library.

BUSINESS MANAGER'S OFFICE. Vivian E. Cummings, Secretary to the Business Manager, Alumni Hall.

DIRECTOR OF ADMISSIONS' OFFICE. Paulyne Rowell, B.A., Maine, 1927, Secretary to the Director, Alumni Hall.

DIRECTOR'S OFFICE, MAINE AGRICULTURAL EXPERIMENT STATION. Mary Norton Cameron, Secretary to the Director, Holmes Hall.

SUMMER SESSION OFFICE. Abbie Annie Dunning, Secretary to the Director of the Summer Session, 18 Stevens Hall, South.

OTHER OFFICERS

DIRECTORS OF THE DORMITORIES

BALENTINE HALL. Louise Augusta Follmer, Director.

COLVIN HALL. Mary B. Brook, Director.

EAST HALL. Martha H. Tate, Director.

ELMS. Velma Katherine Oliver, B.A., Maine, 1925; M.A., 1938, Director.

ESTABROOKE, NORTH SECTION. Esther Melvina Borjesson, Director.

ESTABROOKE, SOUTH SECTION. Ida Field Sturtevant, Director.

WEST HALL. Lillian M. Olivier, Director.

LIBRARY

DOROTHY SMITH MCDONALD, B.S., Simmons School of Library Science, 1921, Reference Librarian.

MARY FLORENCE REED, B.A., Maine, 1929; B.S., Simmons School of Library Science, 1930, Cataloger.

SALLY PALMER BOGAN, B.A., Maine, 1927, Circulation Assistant.

RUTH MESERVEY, B.A., Maine, 1929; B.S., Simmons School of Library Science, 1942, General Assistant.

MARGARET JOHNSON FRIAR, Reserve Assistant.

EUGENIE ST. THOMAS, B.A., Mt. St. Vincent, 1940; B.S., Columbia University Library School, 1942, Documents and Serials Assistant.

FLORENCE BICKFORD MACDONALD, General Assistant.

ANN SIBLEY MORROW, B.A., Maine, 1947, Catalog File Clerk.

HEALTH SERVICE

ROBERT COLE CORNELL, M.D., Director, University Health Service.

BLANCHE IMELDA CASTONGUAY, R.N., Resident Health Nurse.

RUTH V. CATING, R.N., Nurse, Infirmary.

JULIA M. CRAWFORD, R.N., Nurse, Infirmary.

MARJORIE ELIZABETH DEROTH, R.N., Nurse, Clinic.
ELLA D. MERROW, Nurse, Infirmary.

BUILDINGS AND GROUNDS

JOHN CARROLL DEMPSEY, Superintendent of Buildings and Grounds.
DONALD EUGENE PRESSEY, B.S., Maine, 1932, Steam Engineer.

UNIVERSITY PRESS

ROY WESLEY LIBBY, Superintendent.

MAINE CHRISTIAN ASSOCIATION

CHARLES EUGENE O'CONNOR, B.A., Maine, 1936, General Secretary.
MILDRED WRIGHT TIMBERLAKE, B.A., Macalaster, 1942; M.A., University of Minnesota, 1945, Associate Secretary.

VETERANS EDUCATION

LLOYD FRANKLIN PIKE, B.S., University of New Hampshire, 1941, Training Officer, Veterans' Administration.
ELIZABETH STANLEY REID, B.A., Maine, 1941, Secretary in Veterans' Education Office.

FACULTY OF INSTRUCTION

COLVIN, CAROLINE; A.B., Indiana, 1893; Ph.D., University of Pennsylvania, 1901; LL.D., Maine, 1927; Professor Emeritus of History and Government; 231 North Tenth Street, Richmond, Indiana.

SIMMONS, GEORGE EDWARD; B.S., Ohio Northern, 1902; M.S., 1905; B.Sc., Ohio State, 1909; D.Sc., Ohio Northern, 1922; Professor Emeritus of Agronomy, Leesburg, Ohio.

HART, JAMES NORRIS; B.C.E., Maine, 1885; C.E., 1890; S.M., Chicago, 1897; Sc.D., Maine, 1908; Ph.D., 1922; Dean Emeritus of the University and Professor Emeritus of Mathematics and Astronomy; 67 Bennoch Street, Orono.

PATCH, EDITH MARION; B.S., Minnesota, 1901; M.S., Maine, 1910; Ph.D., Cornell University, 1911; Sc.D., Maine, 1937; Entomologist Emeritus; Braeside, College Avenue, Orono.

CHASE, GEORGE DAVIS; A.B., Harvard, 1889; A.M., 1895; Ph.D., 1897; LL.D., Maine, 1927; Dean Emeritus of Graduate Study and Professor Emeritus of Classics; 143 Main Street, Orono.

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WESTON, CHARLES PARTRIDGE; B.C.E., Maine, 1896; C.E. 1899; A.M., Columbia, 1902; Sc.D., Maine, 1941; Professor Emeritus of Mechanics; College Avenue, Orono.

CHADBOURNE, AVA HARRIET; B.A., Maine, 1915; M.A., 1918; A.M., Columbia, 1919; Ph.D., 1928; Professor Emeritus of Education; 46 Crestmont Road, Bangor.

HUDDILSTON, JOHN HOMER; B.A., Baldwin-Wallace, 1890; M.A., 1892; A.B., Harvard, 1893; Ph.D., Munich, 1898; L.H.D., Maine, 1942; Professor Emeritus of Ancient Civilization; 193 Main Street, Orono.

ASHBY, STANLEY ROYAL; B.A., Texas, 1904; B.A., Oxford, 1907; M.A., 1923; A.M., Harvard, 1925; Ph.D., 1927; Professor Emeritus of English; Cambridge, Massachusetts.

BARROWS, WILLIAM EDWARD; B.S., Maine, 1902; E.E., 1908; Professor Emeritus of Electrical Engineering.

LYON, ALPHEUS CROSBY; B.S., Maine, 1902; S.B., Massachusetts Institute of Technology, 1904; C.E., Maine, 1913; Professor Emeritus of Hydraulic Engineering; 735 Main Street, Bangor.

BRAUTLECHT, CHARLES ANDREW; Ph.B., Yale, 1906; Ph.D., 1912; Professor Emeritus of Chemistry and Chemical Engineering; 63 Bennoch Street, Orono.

(Dates in parentheses indicate year of initial appointment)

ABRAHAM, MIKE P. (1947); Master Sergeant, (D.E.M.L.) U. S. Army; Instructor in Military Science and Tactics; Armory.

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ANDERSON, LETITIA WATSON (1946); B.S. in Ed., State Teachers College, Salem, Massachusetts, 1940; M.A., Maine, 1944; Instructor in Mathematics; 103 East Annex.

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ASHMAN, ROBERT IRVING (1930); A.B., Cornell University, 1913; M.F., Yale, 1929; Professor and Head of Department of Forestry; member of Graduate Faculty; 26 Winslow Hall.

AVILA, LILIAN ESTELLE (1947); A.B., Brown, 1930; A.M., Middlebury College, 1941; Instructor in Romance Languages; 203 East Annex.

AXTELL, OLIVER (1947); B.S., Rice Institute, 1944; S.M., Massachusetts Institute of Technology, 1947; Instructor in Chemical Engineering; 162 Aubert Hall.

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BAKER, GREGORY (1935); B.S., Maine, 1924; M.F., Yale, 1939; Associate Professor of Forestry; 24 Winslow Hall.

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BASOM, REBA JANE (1946); B.S., Pennsylvania State, 1942; M.A., Teachers College, Columbia, 1946; Instructor in Home Economics; 13 Merrill Hall.

BEAMESDERFER, JOHN WILLIAM (1947); B.S., Gettysburg College, 1932; M.S., University of Michigan, 1939; Ph.D., 1947; Assistant Professor of Chemistry; 201 Aubert Hall.

BENNETT, CLARENCE EDWIN (1934); Ph.B., Brown, 1923; Sc.M., 1924; Ph.D., 1930; Professor and Head of Department of Physics, member of Graduate Faculty; 200 Aubert Hall.

BEYER, FRANK KEMP (1947); B.S., Cornell University, 1929; M.S., University of Wisconsin, 1930; Assistant Professor of Forestry; 24 Winslow Hall.

BILLINGS, MARY NILES (1947); B.S., Maine, 1944; Instructor in Institutional Management; 15 Merrill Hall.

BISCOE, JONATHAN (1946); B.S., Massachusetts Institute of Technology, 1931; M.S., 1932; Associate Professor of Physics; 108 Aubert Hall.

BOGAN, EDGAR JUNIOR (1929); A.B., Miami (Ohio), 1926; A.M., Princeton, 1929; Assistant Professor of Chemistry; 321 Aubert Hall.

BRANN, BERTRAND FRENCH (1917); B.S., Maine, 1909; M.S., 1911; S.M., Massachusetts Institute of Technology, 1912; Professor of Chemistry; 221 Aubert Hall.

BRAY, PAUL DECOSTA (1923); B.S., Maine, 1914; Ch.E., 1918; Professor of Pulp and Paper Technology; 279 Aubert Hall.

BRICKER, HERSCHEL LEONARD (1928); A.B., Coe, 1928; Assistant Professor of Speech; 330 Stevens Hall.

BROPHY, FRANCIS JOSEPH (1946); Major, Signal Corps, U. S. Army; B.S., Pennsylvania State, 1933; Assistant Professor of Military Science and Tactics; Armory.

BRUSH, EDWARD NEWCOMB (1928); A.B., Vermont, 1925; A.M., Harvard, 1926; Ph.D., 1932; Professor of Psychology, and Dean of Graduate Study; 43 Stevens Hall, North.

BRYAN, NOAH ROSENBERGER (1922); B.A., Pennsylvania State, 1913; A.M., University of Pennsylvania, 1918; Ph.D., Columbia, 1921; Professor of Mathematics; 130 Stevens Hall.

BUZZELL, MARION STEPHANIE (1919); B.A., Maine, 1914; M.A., 1915; Assistant Professor of Romance Languages; 5 Stevens Hall, North.

CARLTON, JANET BEATRICE (1947); A.B., Vassar, 1945; Instructor in Botany; 24 Coburn Hall.

CASAVANT, HENRI AIMÉ (1946); B.A., Bowdoin, 1927; M.A., Middlebury, 1940; Instructor in Romance Languages; 3 Stevens Hall, North.

CASSIDY, MARGARET EILEEN (1937); Diploma, Sargent School for Physical Education, 1928; B.S. in Ed., Maine, 1939; Assistant Professor of Physical Education for Women; Alumni Hall.

CAYTING, ALFRED STANLEY (1940); Part-time Instructor, Department of Music (Orchestra); B Stevens Hall, North.

CHAMBERS, KATHLEEN ROSALIND (1946); B.A., Barnard College, Columbia, 1929; M.A., Maine, 1941; Instructor in English; 200 Stevens Hall.

CHAPMAN, CHARLES VAUGHN, JR. (1947); B.S., Maine, 1947; Instructor in Civil Engineering; 25 Wingate Hall.

CHRISTY, WILLIAM PHILIP, JR. (1947); B.S., Syracuse, 1943; C.P.A. Certificate from New York State, 1946; Instructor in Business Administration; 164 Library.

CLAPP, ROGER (1929); B.S., Cornell University, 1928; M.S., Maine, 1932; Associate Professor of Horticulture, Horticulture Greenhouse.

CLIFFORD, GEORGE EDWIN (1946); B.S., Maine, 1943; Instructor in Engineering Drafting; 218A Library.

CLOKE, PAUL (1926); E.E., Lehigh, 1905; M.S., 1913; Eng.D., Maine, 1934; Dean of the College of Technology, Director of the Technology Experiment Station, and Professor of Electrical Engineering, member of Graduate Faculty; 12 Wingate Hall.

COFFIN, VICTOR HALFORD (1943); B.A., Maine, 1931; Instructor in Physics; 304 Aubert Hall.

COMEGYS, ESTHER (1941); B.A., Wellesley, 1921; M.A., University of Pennsylvania, 1926; Ph.D., Radcliffe, 1941; Assistant Professor of Mathematics; 340 Stevens Hall.

CRABTREE, KENNETH GERARD (1926); S.B., Massachusetts Institute of Technology, 1923; Associate Professor of Electrical Engineering; 4 Lord Hall.

CRAWFORD, JOHN RAYMOND (1930); B.A., Culver-Stockton, 1924; M.A., State University of Iowa, 1929; Ph.D., 1931; Professor of Education and Director of Bureau of Educational Research and Service, member of Graduate Faculty, 8 Stevens Hall, South.

CREAMER, WALTER JOSEPH (1919); B.S., Maine, 1918; E.E., 1921; B.A., 1923; Professor of Communication Engineering and Head of Department of Electrical Engineering, member of Graduate Faculty; 2 Lord Hall.

CROFUTT, CHARLES BURTON (1926); B.A., Cornell College, 1919; M.S., State University of Iowa, 1920; Ph.D., 1923; Associate Professor of Physics; 308 Aubert Hall.

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CROSBY, RUTH (1929); A.B., Mount Holyoke, 1919; A.M., Radcliffe, 1920; Ph.D., 1929; Associate Professor of English; 230 Stevens Hall.

CROWELL, JANE (1947); A.B., Mount Holyoke, 1944; M.A., Maine, 1947; Instructor in English; 107 East Annex.

CURTIS, THEODORE SMALL (1930); B.S., Maine, 1923; Faculty Manager of Athletics; Memorial Gymnasium.

DAVIS, ALEXANDER VOGT (1947); M.A., National University of Mexico, 1944; Doctor en Letras, 1945; Assistant Professor of Spanish and German; 201 East Annex.

DEERING, ARTHUR LOWELL (1912); B.S., Maine, 1912; Sc.D., 1934; Dean of Agriculture, Dean of the College of Agriculture and Director of Extension Service, member of Graduate Faculty; 16 Winslow Hall.

DETWEILER, ERWIN EZRA (1946); Master Sergeant (D.E.M.L.), U. S. Army; Instructor in Military Science and Tactics; Armory.

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DICKINSON, CHARLES ALEXIUS (1926); A.M., Clark, 1922; Ph.D., 1925; Professor of Psychology; 33 Stevens Hall, North.

DINSMORE, JOSEPH SMART, JR. (1947); B.A., Maine, 1941; Instructor in Mathematics; 104 East Annex.

DIRKS, CHARLES ORVILLE (1927); B.S., Kansas State College, 1924; M.S., Iowa State College, 1925; Ph.D., Cornell University, 1935; Professor of Entomology; 32 Coburn Hall.

DODGE, GRACE LUSCOMBE (1947); B.S., Maine, 1947; Instructor in Education.

DORSEY, LLEWELLYN MORSE (1917); B.S., Maine, 1916; M.S., 1923; Professor of Dairy Husbandry; 28 Rogers Hall.

DOUGLASS, IRWIN BRUCE (1940); B.S., Monmouth College, 1926; Ph.D., Kansas, 1932; Professor and Head of Department of Chemistry, member of Graduate Faculty; 263 Aubert Hall

DOW, EDWARD FRENCH (1929); B.S., Bowdoin, 1925; A.M., Harvard, 1926; Ph.D., 1932; Professor of Government and Head of Department of History and Government, member of Graduate Faculty; 145 Stevens Hall.

DUMAIS, THERESE IRENE (1946); B.A., Maine, 1946; Instructor in Speech; 200 East Annex.

EDMUNDS, JOHN JOSEPH, JR. (1946); B.S., Maine, 1941; Instructor in Electrical Engineering; 17 Lord Hall.

EDWARDS, HERBERT JOSEPH (1947); B.A., Ohio State, 1923; A.M., Princeton, 1927; Ph.D., Ohio State, 1930; Instructor in English; 107 East Annex.

ELLIOTT, WALLACE HENRY (1937); B.S., Maine, 1926; M.S., Cornell University, 1937; Assistant Professor and Head of Department of Agricultural Education; 22 Agricultural Engineering Building.

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EVANS, WESTON SUMNER (1920); B.S., Maine, 1918; M.S., 1923; Professor and Head of Department of Civil Engineering, member of Graduate Faculty; 21 Wingate Hall.

FAIRBANKS, PAULINE SEAVEY (1946); A.B., Smith, 1925; Instructor in English; 200 Stevens Hall.

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FLANAGAN, JAMES HENRY (1947); Sc.B., Brown, 1943; M.S., Harvard, 1947; Instructor in Mechanical Engineering; 1 Fernald Hall.

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FLYNN, CARL MUNRO (1940); B.A., Maine, 1930; M.A., Wesleyan, 1932; M.A., Harvard, 1939; Ph.D., 1940; Assistant Professor of Zoology; 25 Coburn Hall.

FOSTER, FRANK CLIFTON (1947); B.S., Colby, 1916; B.D., Union Theological Seminary, 1924; M.A., Columbia, 1924; Ph.D., 1933; Professor of Education, member of Graduate Faculty; 24 Stevens Hall, South.

FULLER, FRANCIS REUEL (1941-1943) (1945); Colonel, Infantry, U. S. Army; B.S., U. S. Military Academy, 1913; Professor of Military Science and Tactics; Armory.

GALLAGHER, JOHN OWEN (1946); A.B., Tufts, 1943; M.A., Fletcher School of Law and Diplomacy, 1946; Instructor in Economics; 38 Stevens Hall, South.

GANNETT, JAMES ADRIAN (1908); B.S., Maine, 1908; M.A., 1928; Registrar; Alumni Hall.

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GASHWILER, JAY SCHOOLING (1945); B.S., Oregon State College, 1937; M.S., Maine, 1939; Instructor in Game Management; 9 Coburn Hall.

GERWECK, RICHARD HARRY (1947); B.S., Stevens Institute of Technology, 1947; Instructor in Mechanical Engineering; Crosby Hall.

GIDDINGS, EDWIN LATHROP (1946); B.S., Maine, 1933; M.F., Yale, 1941; Assistant Professor of Forestry; 215 Library.

GLANVILLE, ALBERT DOUGLAS (1937); A.B., Cornell University, 1927; M.A., Illinois, 1928; Ph.D., Cornell University, 1932; Associate Professor and Acting Head of Department of Psychology, member of Graduate Faculty; 31 Stevens Hall, North.

GLASSEN, CHESTER ELWOOD (1946); Lieutenant Colonel, Coast Artillery Corps, U. S. Army; B.S., Fordham, 1939; Associate Professor of Military Science and Tactics; Armory.

GLAUDE, PAUL MARCEL (1946); A.B., Clark, 1935; Instructor in Romance Languages; 201 East Annex.

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GORDON, EUGENE BRADLEY (1943); A.B., Bowdoin, 1914; Instructor in Mathematics; 340 Stevens Hall.

GORUM, JAMES RUDOLPH (1947); Master Sergeant, (D.E.M.L.), U. S. Army; Instructor in Military Science and Tactics; Armory.

GRAY, HAMILTON (1945); A.B., Harvard, 1933; M.S., 1934; Sc.D., 1938; Professor of Civil Engineering (part-time), member of Graduate Faculty; B1 Lord Hall.

GREENE, PEARL STUART (1923); B.A., Northwestern, 1909; B.S., Lewis Institute, 1914; A.M., Columbia, 1923; Professor and Head of Department of Home Economics, member of Graduate Faculty; 24 Merrill Hall.

HADLEY, MARY SHERMAN (1947); B.A., Wheaton, 1947; Part-time Instructor in Zoology; 30 Na Coburn Hall.

HALL, HOWE WIGGIN (1923); B.S., Maine, 1914; M.S., 1925; Assistant Professor of Animal Husbandry; 25 Rogers Hall.

HALL, JOSEPH I. (1946); B.S., University of Oregon, 1943; M.A., Stanford, 1945; Assistant Professor of Education, member of Graduate Faculty; 16 Stevens Hall, South.

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HODGES, BENJAMIN FRANKLIN, JR. (1947); B.S., Maine, 1947; Instructor in Engineering Drafting; 218A Library.

HOHN, FRANZ EDWARD (1946); B.S., McKendree, 1936; M.S., University of Illinois, 1937; Ph.D., 1940; Assistant Professor of Mathematics; 130 Stevens Hall.

HOPKINS, RICHARD SAMUEL (1947); B.S., Maine, 1941; Instructor in Mechanical Engineering; Mechanical Shops.

HOWELLS, PAUL WILLARD (1947); B.E.E., Syracuse, 1942; Instructor in Electrical Engineering; 17 Lord Hall.

HOWES, CECIL EDGAR (1946); B.S., Maine, 1941; Instructor in Poultry Husbandry; Poultry Building.

HYLAND, FAY (1926); B.S., Michigan State College, 1925; M.S., Maine, 1929; Associate Professor of Botany; 31 Coburn Hall.

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JACKMAN, ERNEST DELMORE (1930); A.B., Colby, 1912; A.M., Columbia, 1924; Professor of Education and Director of Teacher Training, member of Graduate Faculty; 10 Stevens Hall, South.

JEFFREY, WILLIAM HARTLEY (1946); A.B., Drew, 1942; M.A., University of Michigan, 1944; Instructor in History and Government; 140 Stevens Hall.

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JENNESS, LYLE CLAYTON (1923); B.S., New Hampshire, 1922; M.S., Maine, 1925; Professor and Acting Head of Department of Chemical Engineering, Acting Director of Department of Industrial Cooperation, member of Graduate Faculty; 162 Aubert Hall.

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JORDAN, WAYNE (1946); A.B., Marietta, 1924; A.M., Columbia, 1939; Professor of Journalism; 209 East Annex.

KELSO, ELIZABETH ADELE (1947); B.A., Maine, 1947; Instructor in Engineering Drafting; 118A Library.

KENT, BENJAMIN CALVIN (1918); B.S., Maine, 1912; Professor and Head of Department of Engineering Drafting; 102A Library.

KENYON, WILLIAM CURTIS (1926); Instructor in Physical Education; Memorial Gymnasium.

KEYO, HOWARD ARTHUR (1946); B.S., Boston University, 1931; Director of Publicity and Editor of University Publications; 210 Library.

KIMBALL, SPOFFORD HARRIS (1936); B.S., Denison, 1923; M.A., Pittsburgh, 1925; A.M., Harvard, 1929; Ph.D., 1932; Professor of Mathematics and Head of Department of Mathematics and Astronomy; Director of Freshman Week, member of Graduate Faculty; 135 Stevens Hall.

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KLEIN, JOHN FREDERICK (1933); A.B., Cornell University, 1912; A.M., 1913; Ph.D., 1920; Professor of German; 320 Stevens Hall.

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LAMOREAU, FRED LINCOLN (1930); B.A., Maine, 1930; M.A., 1934; Associate Professor of Mathematics and Astronomy; 120 Stevens Hall.

LAPIDUS, LEO (1946); A.B., Harvard, 1931; A.M., Boston University, 1937; Instructor in Mathematics; 104 East Annex.

LEACH, WALTER WILLIAM (1947); A.B., University of Arizona, 1944; A.M., Princeton, 1946; Instructor in Psychology; 39 Stevens Hall, North.

LEAVITT, HAROLD WALTER (1917); B.S., Maine, 1915; C.E., 1918; M.S., 1921; Professor of Highway Engineering; 3 Wingate Hall.

LEBRUN, EDMOND JOSEPH (1947); B.S., Rhode Island State College, 1941; M.S., University of Tennessee, 1942; Instructor in Agricultural Economics and Farm Management; 34 Winslow Hall.

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LEVINSON, RONALD BARTLETT (1926); A.B., Harvard, 1919; Ph.D., Chicago, 1924; Professor and Head of Department of Philosophy, member of Graduate Faculty; 335 Stevens Hall.

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LIBBEY, WALDO MCCLURE (1944); B.S., Maine, 1943; Assistant Professor of Electrical Engineering; 24 Lord Hall.

LIBBY, WINTHROP CHARLES (1934); B.S., Maine, 1932; M.S., 1933; Professor of Agronomy and Head of Department of Agronomy and Agricultural Engineering, member of Graduate Faculty; 2 Agricultural Engineering Building.

LITTLEFIELD, LYLE EDWIN (1947); B.S., Maine, 1945; Instructor in Horticulture; Horticultural Building.

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LUKE, HENRY ALAN (1947); B.S., Utah State Agricultural College, 1941; M.S., Cornell University, 1943; Associate Professor of Agricultural Economics and Farm Management; 38 Winslow Hall.

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MARTIN, FREDERIC THURMAN (1934); Ch.E., Lehigh, 1925; Ph.D., Johns Hopkins, 1929; Assistant Professor of Chemistry; 207 Aubert Hall.

MAWHINNEY, ANNE DOWLING (1946); B.A., Maine, 1943; M.A., Syracuse, 1946; Instructor in Mathematics; 103 East Annex.

MAXIM, GEORGE EDWARD (1947); B.S., Maine, 1943; Instructor in Physics; 314 Aubert Hall.

MENDALL, HOWARD LEWIS (1937); B.A., Maine, 1931; M.A., 1934; Associate Professor of Game Management, member of Graduate Faculty; 9 Coburn Hall.

MENGERS, MARIE CHRISTIANSEN (1947); B.A., University of Nebraska, 1928; M.A., Wellesley, 1933; Instructor in French; 203 East Annex.

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MEYER, MARVIN CLINTON (1946); B.S., Missouri State College, 1932; A.M., Ohio State, 1936; Ph.D., University of Illinois; Assistant Professor of Zoology; 23 Coburn Hall.

MILES, EDWIN KENNETH (1933); B.A., Lawrence, 1929; M.A., Northwestern; 1930; Ph.D., University of Pennsylvania, 1933; Associate Professor of German; 320 Stevens Hall.

MILES, KATHERINE ADELE (1946); B.A., Ohio State, 1925; B.S., in Education, 1925; M.S., 1927; Ph.D., University of Minnesota, 1945; Associate Professor of Home Economics; 11A Merrill Hall.

MONRO, SUTTON (1946); B.S., Massachusetts Institute of Technology, 1942; Instructor in Mathematics; 102 East Annex.

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MURRAY, JOSEPH MAGEE (1934); B.A., Maine, 1925; M.A., University of Michigan, 1927; Ph.D., 1929; Dean of the College of Arts and Sciences, member of Graduate Faculty; 100 Stevens Hall.

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OLSON, ROBERT EDWARD (1946); B.S., Cornell University, 1938; Instructor in Entomology; 32 Coburn Hall.

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PARSONS, KENNETH LANGMAID (1945); B.S., Maine, 1934; Assistant Professor of Electrical Engineering; 24 Lord Hall.

PEDLOW, JOHN THOMAS (1936); B.S., Pennsylvania State, 1925; M.S., Rutgers, 1926; Ph.D., Pennsylvania State, 1934; Professor of Biochemistry; 15 Winslow Hall.

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PERKINS, HARRY ROY (1917); Instructor in Mechanical Engineering; Mechanical Shops.

*Plummer, Henry Almon (1946); B.S., Maine, 1930; Instructor in Forestry; 26 Winslow Hall.

Powelson, Dorothy May (1946); B.S., University of Georgia, 1938; M.S., University of Wisconsin, 1943; Ph.D., 1946; Assistant Professor of Bacteriology; 13 Winslow Hall.

Prageman, Irving Henry (1927); Ph.B., Yale, 1918; M.E., 1923; Professor of Mechanical Engineering; 16 Lord Hall.

Prince, Alton Ernest (1946); B.S., Maine, 1936; M.S., 1938; M.A., Harvard, 1940; Ph.D., 1945; Assistant Professor of Botany; 8 Coburn Hall.

Pullen, Winston Eugene (1946); B.S., Maine, 1941; M.S., Cornell University, 1942; Instructor in Agricultural Economics and Farm Management; 34 Winslow Hall.

Quinsey, Donald Leroy (1942); B.S., University of Illinois, 1924; M.S., 1932; Ph.D., 1935; Assistant Professor of Psychology; 39 Stevens Hall, North.

Ramsdell, Gordon Estey (1947); B.S., Maine, 1942; Instructor in Dairy Husbandry; 28 Rogers Hall.

Randall, Arthur Gordon (1946); B.S., Yale, 1933; M.F., 1934; Instructor in Forestry; 24 Winslow Hall.

Rankin, Rome (1947); A.B., Waynesburg College, 1924; M.A., University of Michigan, 1934; Associate Professor of Physical Education; 8 Stevens Hall, South.

Reynolds, Cecil John (1935); B.Sc., Mount Allison, 1926; B.A., 1927; B.A., Oxford, 1929; B.Litt., 1930; A.M., Harvard, 1932; Associate Professor of English; 245 Stevens Hall.

Rhoads, George Orris (1947); Technical Sergeant (D.E.M.L.), U. S. Army; Instructor in Military Science and Tactics; Armory.

Rich, Nathan Harold (1941); B.S., Maine, 1940; Assistant Professor of Agricultural Engineering; 21 Agricultural Engineering Building.

Rinkaus, Joseph James (1935); Master Sergeant (D.E.M.L.), U. S. Army; Instructor in Military Science and Tactics; Armory.

Rogers, Marion Elizabeth (1927); Diploma, Sargent School for Physical Education, 1927; B.A., Maine, 1930; M.A., 1936; Associate Professor of Physical Education for Women; Alumni Hall.

Romanyshyn, John Michael (1946); B.A., University of Oklahoma, 1942; Instructor in Sociology; 44 Stevens Hall, South.

Runion, Howard Lucius (1936); A.B., University of Michigan, 1931; M.A., 1932; Ph.D., 1936; Professor and Head of Department of Speech, member of Graduate Faculty; 350 Stevens Hall.

Russell, Kenneth LeMont (1946); Master Sergeant (D.E.M.L.), U. S. Army; Instructor in Military Science and Tactics; Armory.

Ryan, John (1947); B. Comm., National University of Ireland, 1918; M.A., 1919; Ph.D., Edinburgh, 1922; Associate Professor of Economics and Business Administration; 30 Stevens Hall, South.

Ryckman, Seymour James (1940); B.S., Michigan State, 1939; M.S., Missouri University, 1942; Associate Professor of Sanitary Engineering; 21 Wingate Hall.

Sanderlin, George William (1938-1942) (1943); B.A., American University,

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* On leave of absence.

1935; Ph.D., Johns Hopkins, 1938; Assistant Professor of English; 220 Stevens Hall.

SCAMMAN, WILLIAM FRANCIS (1926); B.A., Maine, 1908; M.A., 1930; Associate Professor of English; 345 Stevens Hall.

SCHOFIELD, WENTWORTH HENRY, JR. (1946); B.S., Maine, 1943; Instructor in Mechanical Engineering; 14 Lord Hall.

SEAL, PHILIP MERVIN (1937-38) (1947); B.S., Worcester Polytechnic Institute, 1930; M.S., 1932; Assistant Professor of Electrical Engineering; 3 Lord Hall.

SEIDMAN, JEROME MARTIN (1947); B.S., Rutgers, 1932; M.S., 1934; Instructor in Psychology; 39 Stevens Hall, North.

SELWOOD, JAMES GORDON (1941); Part-time Instructor in Department of Music (Chapel Choir and Glee Clubs); 15 Stevens Hall, North.

SEZAK, SAMUEL (1939); B.A. in Ed., Maine, 1931; Assistant Faculty Manager of Athletics; Memorial Gymnasium.

SEZAK, WILLIAM (1946); B.S. in Ed., Boston University, 1938; M.Ed., Maine, 1946; Instructor in Economics; 14 Stevens Hall, South.

SHAININ, VINCENT EVERETT (1946); A.B., Columbia, 1943; Assistant Professor of Geology, Department of Civil Engineering; 21 Wingate Hall.

SHAW, FRANCIS GOODWIN (1947); B.S., Maine, 1947; Part-time Instructor, Department of Music (Band); 15 Stevens Hall, North.

SHELTON, TERESA (1947); B.S., Woman's College of the University of North Carolina, 1947; Instructor in Physical Education for Women; Alumni Hall.

SHIBLES, MARK RICHARD (1947); B.A., Colby, 1929; M.Ed., Boston University, 1935; Professor of Education, Dean of the School of Education and Director of the Summer Session, member of Graduate Faculty; 20 Stevens Hall, South.

SILK, LEONARD SOLOMON (1947); A.B., University of Wisconsin, 1940; Ph.D., Duke, 1947; Instructor in Economics; 42 Stevens Hall, South.

SMALL, GEORGE WILLIAM (1929); B.A., Tennessee, 1915; M.A., Johns Hopkins, 1921; Ph.D., 1922; B.Litt., Oxford, 1927; Professor of English Language and Literature; 220 Stevens Hall.

SMITH, HARRY WOODBURY (1912); B.S., Maine, 1909; M.S., 1922; Ph.D., Rutgers, 1934; Professor of Biochemistry; 15 Winslow Hall.

*SMITH, HOWARD ROSS (1942); A.B., University of California, 1939; M.A., 1940; Instructor in Art.

SMITH, MYRON DOUGLAS (1947); Major, Field Artillery, U. S. Army; Assistant Professor of Military Science and Tactics; Armory.

SMITH, PAYSON (1940); A.M., Tufts, 1903; Litt.D., Bates, 1909; Litt.D., Bowdoin, 1909; Ed.D., Rhode Island State Teachers College, 1926; Ed.D., Colby, 1940; LL.D., Maine, 1908; LL.D., Norwich University, 1928; LL.D., Springfield College, 1934; LL.D., Northeastern University, 1935; Professor Emeritus of Education, and Lecturer in Education, member of Graduate Faculty; 24 Stevens Hall, South.

SMITH, ROBERT DOUGLAS (1947); B.S., Tufts, 1945; M.S., Massachusetts Institute of Technology, 1947; Instructor in Mechanical Engineering; 14 Lord Hall.

SMYTH, JOHN ROBERT (1929); B.S., Purdue, 1920; M.S., Kentucky, 1928; Professor and Head of Department of Poultry Husbandry, member of Graduate Faculty; Poultry Building.

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* On leave of absence.

SNYDER, MARY ELLA (1936); A.B., Gooding College, 1919; M.S., Iowa State College, 1936; Assistant Professor of Home Economics; 26 Merrill Hall.

SOPCHAK, ANDREW LEO (1947); A.B., Syracuse, 1946; Instructor in Psychology; 39 Stevens Hall, North.

SPARROW, THERON ALONZO (1926); B.S., Maine, 1924; M.S., 1938; Associate Professor of Mechanical Engineering; Crosby Hall.

SPEICHER, BENJAMIN ROBERT (1937); A.B., Denison, 1929; M.S., Pittsburgh, 1931; Ph.D., 1933; Professor and Head of Department of Zoology, member of Graduate Faculty; 16 Coburn Hall.

SPRAGUE. ADELBERT WELLS (1916); B.S., Maine, 1905; A.M., Harvard, 1907; Professor and Head of Department of Music; 15 Stevens Hall, North.

STALLWORTHY, MARGARET DORMAN (1947); B.A., Dalhousie, 1932; Part-time Instructor in Mathematics; 106 East Annex.

STALLWORTHY, WILSON BURNETT (1946); B.A., University of Toronto, 1935; Ph.D., 1947; Instructor in Zoology; 21a Coburn.

STARBIRD, WILLIAM EDWARD (1947); B.S., Maine, 1947; Instructor in English; 105 East Annex.

STARR, WILMARTH HOLT (1937); B.A., Wesleyan, 1934; Ph.D., Johns Hopkins, 1937; Professor of Romance Languages and Head of Department of Modern Languages and Classics, member of Graduate Faculty; 1 Stevens Hall, North.

STEDMAN, LOUISE ADELIA (1944); B.A., Iowa, 1930; M.A., 1937; Associate Professor of Home Economics, member of Graduate Faculty; 13 Merrill Hall.

STEINMETZ, FERDINAND HENRY (1927); B.S., Illinois, 1915; M.S., Minnesota, 1921; Ph.D., 1926; Professor of Botany and Head of Department of Botany and Entomology, member of Graduate Faculty; 24 Coburn Hall.

STEVENS, JOYCE CHENEY (1945); B.A., Maine, 1935; Instructor in Speech; 240 Stevens Hall.

STEWART, ALICE ROSE (1947); B.A., Maine, 1937; A.M., Radcliffe, 1938; Ph.D., 1946; Assistant Professor of History; 110 Stevens Hall.

STEWART, JOHN EMMONS (1928); B.A., Maine, 1927; M.A., 1928; Associate Professor of Mathematics and Assistant to the Dean of the College of Arts and Sciences; 175 Stevens Hall.

STINCHFIELD, ROGER MAXIM (1947); B.S., Maine, 1939; M.S., 1946; Instructor in Chemical Engineering; Research Assistant in Department of Industrial Cooperation; 162 Aubert Hall.

STRUCHTEMEYER, ROLAND AUGUST (1946); B.S., University of Missouri, 1939; M.A., 1940; Assistant Professor of Agronomy; 2 Agricultural Engineering Building.

SUAREZ, NORMAN VICTOR (1947); B.A., University of Colorado, 1944; LL.B., 1947; Instructor in Government; 140 Stevens Hall.

SWEETMAN, MARION DEYOE (1927); B.S., Iowa State College, 1921; M.S., 1922; Ph.D., Minnesota, 1927; Professor of Home Economics; 25 Merrill Hall.

SWIFT, HAROLD CLAYTON (1920); B.S., Maine, 1918; M.S., 1923; Assistant Professor of Agronomy and Agricultural Engineering; 21 Agricultural Engineering Building.

TAYLOR, FRANK MELROY (1940); B.S., Lafayette College, 1928; C.E., 1937; Associate Professor of Civil Engineering; 11 Wingate Hall.

TEBBE, ROBERT FREDERICK (1946); B.A., St. Olaf College, 1941; Ph.D., Purdue, 1945; Assistant Professor of Chemistry; 479 Aubert Hall.

TERMAN, GILBERT LEROY (1946); B.S., Kansas State, 1938; Ph.D., University of Wisconsin, 1941; Professor of Agronomy; The Maples.

THODE, EDWARD FREDERICK (1947); S.B., Massachusetts Institute of Technology; M.S., 1943; Sc.D., 1947; Assistant Professor of Chemical Engineering; 379 Aubert Hall.

THOMSON, ROBERT BRUCE (1947); A.B., Harvard, 1932; LL.B., 1936; Instructor in Government; 205 East Annex.

TODD, FRANK HAROLD (1946); B.S., Bowdoin, 1935; M.A., Maine, 1936; Instructor in Physics; 314 Aubert Hall.

TRAFFORD, DAVID WHITE (1947); B.A., Maine, 1939; M.A., Indiana University, 1940; Ph.D., 1947; Instructor in History; 110 Stevens Hall.

TREFETHEN, JOSEPH MUZZY (1938); A.B., Colby, 1931; M.S., University of Illinois, 1932; Ph.D., Wisconsin, 1935; Professor of Geology, Department of Civil Engineering; 2 Fernald Hall.

TREVETT, MOODY FRANCIS (1946); B.S., Massachusetts State, 1929; M.S., 1940; Assistant Professor of Agronomy; 9 Agricultural Engineering Building.

TRUST, HARRY KNOWLTON (1947); B.A., Bowdoin, 1943; Instructor in Chemistry; 425 Aubert Hall.

TURNER, ALBERT MORTON (1922); A.B., Harvard, 1912; A.M., 1914; Ph.D., 1920; Professor of English and Comparative Literature and Head of Department of English, member of Graduate Faculty; 225 Stevens Hall.

TURNER, WALTER WEEKS (1947); B.S., Massachusetts Institute of Technology, 1947; M.S., 1947; Instructor in Electrical Engineering; 17 Lord Hall.

TUTTLE, DONALD MONROE (1947); B.S., Michigan State College, 1940; M.S., 1947; Instructor in Entomology; 32 Coburn Hall.

VIGNERAS, LOUIS-ANDRÉ (1936); B. ès L., Université de Poitiers, 1920; B.A., Princeton, 1921; M.A., 1922; Ph.D., Harvard, 1934; Associate Professor of Romance Languages; 9 Stevens Hall, North.

VIRTUE, CHARLES FRANKLIN (1946); B.A., University of Cincinnati, 1925; Ph.D., Yale, 1933; Associate Professor of Philosophy; 325 Stevens Hall.

WALLACE, STANLEY MOORE (1922); Diploma, New Haven Normal School of Gymnastics, 1917; Professor of Physical Education; Memorial Gymnasium.

WARING, JAMES HOWARD (1925); B.S., Pennsylvania State, 1920; M.S., 1921; Ph.D., Michigan State College, 1930; Professor and Head of Department of Horticulture, member of Graduate Faculty; Horticulture Greenhouse.

WATSON, HARRY DEXTER (1920); B.S., Maine, 1920; M.S., 1929; Professor and Head of Department of Mechanical Engineering, member of Graduate Faculty; 1 Lord Hall.

WATSON, JOHN EDWARD (1946); B.S., Fordham, 1937; M.A., Maine, 1947; Instructor in English; 245 Stevens Hall.

WEBSTER, FRED NORMAN (1947); B.S., Worcester Polytechnic Institute, 1939; M.S., 1941; Assistant Professor of Mechanical Engineering; 14 Lord Hall.

WEILER, THEODORE CHRISTLIEB (1946); B.A., Ohio Wesleyan, 1925; Ph.D., Yale, 1936; Assistant Professor of Sociology, member of Graduate Faculty; 14 Stevens Hall, South.

WENTWORTH, DOROTHY HELEN (1947); A.B., Boston University, 1946; M.A., 1947; Instructor in Government; 206 East Annex.

WHITMORE, ALBERT AMES (1915-1917) (1918); B.S., Maine, 1906; M.A., 1917; Professor of History; 150 Stevens Hall.

WHITNEY, WALTER REGINALD (1928); B.S., Bowdoin, 1923; A.M., Harvard, 1935; Associate Professor of English; 250 Stevens Hall.

WHITTEN, JAMES MALCOLM (1947); A.B., Colby, 1944; Instructor in History and Government; 110 Stevens Hall.

WICK, WALTER ODDMUND (1947); B.Ed., Teachers College of Connecticut, 1940; M.A., Clark, 1947; Instructor in History and Government; 204 East Annex.

WIEMAN, ELTON EWART (1946); A.B., University of Michigan, 1921; Dean of Men and Director of Physical Education and Athletics; 207 Library.

WILLIAMSON, PHYLLIS DIRKS (1946); B.A., Louisiana State University, 1945; Instructor in Speech; 240 Stevens Hall.

WILSON, EDITH GRACE (1931); B.A., Southern California, 1923; M.A., 1928; Instructor in Sociology; Dean of Women; 74 Library.

WITHAM, FERN YORK (1946); B.S., Maine, 1946; Instructor in Home Economics; 35 Merrill Hall.

WITHAM, WALTER HERBERT (1946); B.S. in Ed., Maine, 1946; Instructor in Mechanical Engineering; Machine Shops.

WITTER, JOHN FRANKLIN (1923); B.S., Maryland, 1928; D.V.M., Michigan State College, 1932; Professor of Animal Pathology; Poultry Building.

WOODBURY, HAROLD MACE (1937); B.S., Maine, 1937; Instructor in Physical Education for Men; Memorial Gymnasium.

WOOLLEY, THOMAS RUSSELL, JR. (1946); B.A., Maine, 1941; Instructor in Speech; 200 East Annex.

WORTHINGTON, KENT LEWIS (1947); A.B., Susquehanna University, 1938; M.A., University of Pennsylvania, 1941; Instructor in History and Government; 205 East Annex.

YORK, ROBERT MAURICE (1946); A.B., Bates, 1937; A.M., Clark, 1938; Ph.D., 1941; Assistant Professor of History; 150 Stevens Hall.

ADRIANCE, ROBERT IRVING; A.B., Dartmouth, 1906; M.A., Columbia, 1928; Lecturer in Economics; 42 Stevens Hall, South.

DIETRICH, ALBERT GILES; A.B., University of Pittsburgh, 1936; M.S.A., 1941; Lecturer in Sociology; 111 East Annex.

PARKER, HOPE FRANCES; B.S. in N. Ed., Boston University, 1943; Lecturer in Nursing.

TURNER, PERCIE HOPKINS, A.B., Smith, 1917; A.M., 1920; A.M., Radcliffe, 1923; Ph.D., 1924; Lecturer in English; 225 Stevens Hall.

ALLAN, RODNEY HIGGINS; B.S., Maine, 1947; Graduate Assistant in Agricultural Engineering; 21 Agricultural Engineering Building.

ALLEY, HAROLD ROSCOE; B.A., Maine, 1947; Graduate Assistant, Department of History and Government; 206 East Annex.

ANDERSON, DORIS STICKNEY; B.A., Maine, 1946; Graduate Assistant in Sociology; 14 Stevens Hall, South.

ANGEL, CHARLES ROBERT; B.S., Maine, 1947; Graduate Fellow in Biochemistry; 15 Winslow Hall.

BRAGG, PHYLLIS PENDLETON; B.A., Maine, 1947; Graduate Assistant in Spanish; 1 Stevens Hall, North.

BRUNDAGE, ROBERT WELLS; B.S., Maine, 1947; Graduate Assistant in Agricultural Economics; 32 Winslow Hall.

CHUNG, HSIANG-CHU; B.S., National Southwest Associated University, Kunming,

China, 1944; Research Fellow, Department of Industrial Cooperation (D.S. & R.H. Gottesman Foundation Fellowship).

Coon, Philip Leslie, Jr.; B.S., Geneva College, 1947; Graduate Assistant in Chemistry; 263 Aubert Hall.

Coulter, Malcolm Willford; B.S., University of Connecticut, 1942; Graduate Assistant in Wildlife Conservation; 9 Coburn Hall.

Crockett, Burleigh Stetson; B.S., Maine, 1945; Graduate Fellow in Animal Husbandry; 25 Rogers Hall.

Damon, Howard Curtis; B.A., Maine, 1945; Graduate Assistant in English; 105 East Annex.

Eastman, Paul Jean; B.S., Maine, 1946; Graduate Assistant in Agronomy; 9 Agricultural Engineering Building.

Easton, Thomas William; B.A., Maine, 1943; Graduate Assistant, Department of Zoology; 14A Coburn Hall.

Fogler, Henry Harrison; B.S., Maine, 1943; Research Fellow, Department of Industrial Cooperation (Eastwood-Nealley Fellowship); 162 Aubert Hall.

Georgitis, William James; B.S., Bowdoin, 1942; Graduate Assistant in Chemistry; 263 Aubert Hall.

Gillis, John Malcolm; B.S. in Ed., Boston University, 1946; Graduate Assistant, Department of History and Government; 206 East Annex.

Glasgow, Leslie Lloyd; B.S., Purdue, 1942; Graduate Assistant in Wildlife Conservation; 9 Coburn Hall.

Goetschius, Alfred Myron; B.S., Maine, 1947; Graduate Assistant in Psychology; 163 Library.

Goldsmith, Irma Miller; B.A., Maine, 1946; Graduate Assistant in Psychology; 163 Library.

Graham, Benjamin Franklin, Jr.; B.S., Maine, 1943; Graduate Fellow, Department of Botany and Entomology; 31 Coburn Hall.

Hayden, William George, Jr.; B.A., Clark, 1946; Graduate Assistant in Chemistry; 263 Aubert Hall.

Herbolzheimer, Fred, Jr.; B.S., Maine, 1943; Research Fellow, Department of Industrial Cooperation (Eastwood-Nealley Fellowship); 263 Aubert Hall.

Hunt, John Herbert; B.S., Maine, 1947; Research Fellow, Department of Industrial Cooperation (Sea & Shore Fisheries Fellowship); 7 Coburn Hall.

Ingalls, Robert Dale; B.S., Maine, 1943; Research Fellow, Department of Industrial Cooperation (Chemical Warfare Service Fellowship); 262 Aubert Hall.

Keirstead, Clifford Harmon; B.S., Maine, 1947; Graduate Assistant in Agricultural Economics; 32 Winslow Hall.

Leonard, Frederic Adams; B.S., Maine, 1943; Graduate Fellow in Bacteriology; 13 Winslow Hall.

Marshall, Elinor Crowell; B.A., Maine, 1943; Graduate Assistant in Zoology; 30 Sa Coburn Hall.

Martin, Robert Goodale; B.S., Maine, 1944; Graduate Assistant, Department of Civil Engineering; 3 Wingate Hall.

Mawhinney, Eugene Alberto; B.S., Maine, 1947; Graduate Assistant, Department of History and Government; 110 Stevens Hall.

Nelson, Robert William; B.S., Maine, 1947; Research Fellow, Department of Industrial Cooperation (Solvay Process Company Fellowship); 164 Aubert Hall.

PARMENTER, THOMAS ELMER; B.S., Maine, 1946; Research Fellow, Department of Industrial Cooperation (Solvay Process Company Fellowship); 263 Aubert Hall.

PARSONS, ROBERT DECATUR; B.S., Pennsylvania State College, 1944; Research Fellow, Department of Industrial Cooperation (Chemical Warfare Service Fellowship); 262 Aubert Hall.

PLAISTED, PHILIP HEATH; B.S., Maine, 1943; Graduate Fellow, Department of Botany and Entomology; 8 Coburn Hall.

ROBINSON, SAMUEL ARTHUR; B.S., Bowdoin, 1944; Graduate Assistant in Chemistry; 263 Aubert Hall.

SLEIGHT, EARLAND KINGSLEY; B.S., Maine, 1943; Graduate Assistant, Department of Chemistry; 263 Aubert Hall.

SMITH, MARY ELIZABETH; B.A., Maine, 1946; Graduate Assistant, Department of Zoology; 30 Sa Coburn Hall.

STOTLER, THOMAS; B.S., Maine, 1947; Graduate Assistant, Department of Economics and Sociology; 111 East Annex.

TOOLE, JOHN WILLIAM; B.A., Harvard, 1946; Graduate Assistant in Mathematics; 106 East Annex.

WEBSTER, MARIAN LOUISE; B.S., Kansas State Teachers College, 1946; Graduate Assistant in Psychology; 163 Library.

WELCH, WALTER RAYNES; B.S., Maine, 1947; Research Fellow, Department of Industrial Cooperation (Sea & Shore Fisheries Fellowship); 15 Winslow Hall.

ABBOTT, WARREN; Technician, Department of Chemical Engineering; 175 Aubert Hall.

BOWDEN, RALPH FREEMAN; Technician, Department of Mechanical Engineering; Crosby Mechanical Laboratory.

FORRANT, DAVID; Technician, Department of Electrical Engineering; Lord Hall.

STORMANN, CHARLES LINWOOD; Technician, Departments of Physics and Civil Engineering, and Technology Experiment Station; 102 Aubert Hall.

ASSOCIATES IN NURSING EDUCATION

BOOTH, MABEL F., R.N.; Diploma in Nursing, Peter Bent Brigham School of Nursing, Boston, Massachusetts; B.S., Teachers College, Columbia University; Director of Nursing, Eastern Maine General Hospital, Bangor.

HASKINS, REVA M., R.N.; Diploma in Nursing, St. Lukes' Hospital School of Nursing, New Bedford, Massachusetts; B.S., Simmons; Director of Nursing, Central Maine General Hospital, Lewiston.

THE BRUNSWICK CAMPUS OF THE UNIVERSITY OF MAINE

OFFICERS OF ADMINISTRATION

*PRESIDENT. Arthur Andrew Hauck.

DIRECTOR, THE BRUNSWICK CAMPUS. Jasper Farnham Crouse.

*BUSINESS MANAGER AND PURCHASING AGENT. Henry Leroy Doten.

ASSISTANT TO THE BUSINESS MANAGER, in charge at The Brunswick Campus.
Francis Stephen McGuire.

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* At Orono Campus.

*Treasurer. Frederick Shaw Youngs.
Assistant to the Treasurer, in charge at The Brunswick Campus. Harry Wight Gordon.
*Dean of the College of Agriculture. Arthur Lowell Deering.
*Dean of the College of Arts and Sciences. Joseph Magee Murray.
*Dean of the College of Technology. Paul Cloke.
*Dean of Men. Elton Ewart Wieman.
Dean of Men, The Brunswick Campus. Jonathan Wales French, Jr.
*Director of Admissions. Percy Fremont Crane.
*Librarian. Louis Tappe Ibbotson.
Assistant to the Librarian, in charge at The Brunswick Campus. Katherine Woodworth Trickey.
*Registrar. James Adrian Gannett.
Assistant to the Registrar, in charge at The Brunswick Campus. Helen P. Bunker.

HEALTH SERVICE

Charles L. Tuttle, M.D., Physician.
LaVona P. McCowan, R.N., Head Nurse.
Patricia Emerson, R.N., Resident Nurse.

OTHER OFFICERS

Harry Partridge, Superintendent of Buildings and Grounds.
Carl Linscott, Housing Manager.
Clayton Cole, Dining Hall Manager.

VETERANS' ADMINISTRATION REPRESENTATIVES

Allan Goud, Training Officer.
James Currie, Contact Officer.

FACULTY OF INSTRUCTION

Andrews, Stephen E., Jr.; Captain, Infantry, U. S. Army; B.A., Western Maryland College, 1938; Assistant Professor of Military Science and Tactics.
*Ashman, Robert Irving; A.B., Cornell University, 1913; M.F., Yale, 1929; Professor and Head of Department of Forestry.
Barden, Albert Arnold, Jr.; A.B., Brown, 1932; Sc.M., 1934; Ph.D., Northwestern, 1941; Instructor in Zoology and Chairman.
*Bennett, Clarence Edwin; Ph.B., Brown, 1923; Sc.M., 1924; Ph.D., 1930; Professor and Head of Department of Physics.
Buck, Raymond Wilbur, Jr.; B.S., Maine, 1941; Instructor in Botany.
Bybee, Charles Elmer; A.B., Tarkio College, 1947; Instructor in Chemistry.
Carre, Marie-Rose; Licence ès Lettres, Université d'Alger, 1940; Ecrit de l'agrégation des lettres, 1941; Instructor in French.
Clark, Archie Raymond; B.S., Maine, 1947; Instructor in Physics.
Crouse, Jasper Farnham; B.S., Aurora College, 1925; M.A., Bates, 1936; Director of The Brunswick Campus.

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* At Orono Campus.

CURTIS, STATON RUSSELL; B.S. in Ed., Gorham State Teachers College, 1942; Instructor in Physical Education.

*DICKEY, HOWARD CHESTER (1947); B.S., Michigan State, 1934; M.S., West Virginia University, 1936; Ph.D., Iowa State, 1939; Professor and Head of Department of Animal Industry.

DOE, PAUL RANDALL; B.S., Boston University, 1938; Instructor in Chemistry.

*DOUGLASS, IRWIN BRUCE; B.S., Monmouth College, 1926; Ph.D., Kansas, 1932; Professor and Head of Department of Chemistry.

*DOW, EDWARD FRENCH; B.S., Bowdoin, 1925; A.M., Harvard, 1926; Ph.D., 1932; Professor of Government and Head of Department of History and Government.

FRENCH, JONATHAN WALES, JR.; B.S., Bowdoin, 1937; Graduate Study in France; Graduate Study, Columbia University; Instructor in French and Chairman of Languages; Administrative Assistant to the Director; Dean of Men.

GIVEEN, SAMUEL MERRITT; A.B., Bowdoin, 1942; Instructor in Mathematics.

GORDON, ELIZABETH BARTLETT; Attended Columbia and Harvard Universities, The Sorbonne and The University of Munich; Instructor in Romance Languages.

HALKYARD, NEIL WASHINGTON; A.B., Union College, 1932; Instructor in Mathematics.

HAMM, PHILLIP LORD; B.S. in Ed., Maine, 1943; Instructor in Mathematics.

HANSON, BEATRICE AUSTIN; B.S. in Ed., Maine, 1941; M.A., 1942; Instructor in Speech.

HANSON, FRANK BURTON; B.S. in Ed., Maine, 1942; M.A., University of North Carolina, 1946; Instructor in Speech.

HAPP, WILLIAM, II; B.A., Bowdoin, 1946; Instructor in English.

HEDIN, CONSTANCE LOWELL; A.B., Vassar, 1937; M.A., Maine, 1945; Instructor in English.

*HOWES, CECIL EDGAR (1946); B.S., Maine, 1941; Instructor in Poultry Husbandry.

INNES, RICHARD BURGESS; B.S., Maine, 1943; Instructor in Physics.

JOHNSON, CHARLES A.; Instructor in Engineering Drafting.

*KENT, BENJAMIN CALVIN; B.S., Maine, 1912; Professor and Head of Department of Engineering Drafting.

*KIMBALL, SPOFFORD HARRIS; B.S., Denison, 1923; M.A., Pittsburgh, 1925; A.M., Harvard, 1929; Ph.D., 1932; Professor of Mathematics and Head of Department of Mathematics and Astronomy; Director of Freshman Week.

*KIRSHEN, HIMY BENJAMIN; B.S., Whitman, 1926; A.M., Columbia, 1929; Ph.D., Wisconsin, 1937; Professor of Economics and Head of Department of Economics and Sociology.

KNOPF, MARTIN; B.S., University of Berlin, 1909; M.S., 1910; Ph.D., 1912; Assistant Professor of Chemistry.

LACY, ROY CLEM; B.A., Abilene Christian College, 1934; M.A., Texas Christian University, 1937; Instructor in English.

LIBBY, NANCY DOROTHEA; B.A., Colby, 1936; M.A., Columbia, 1942; Instructor in English.

*LIBBY, WINTHROP CHARLES; B.S., Maine, 1932; M.S., 1933; Professor of Agronomy and Head of Department of Agronomy and Agricultural Engineering.

LITTLE, CLIFFORD CHARLTON; A.B., Bowdoin, 1945; Instructor in Physics.

*LORING, FRED PERLEY (1934); B.S., Maine, 1916; M.S., 1936; Director of Short Courses and Assistant to the Dean of the College of Agriculture.

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* At Orono Campus.

LOUDER, HAROLD WAYNE; B.S., Bates, 1930; M.Ed., 1939; Instructor in Chemistry.

MACOMBER, DAVID HAYNES; A.B., Bowdoin, 1939; Instructor in History and Government.

MARTIN, WILLARD J.; B.S., University of Minnesota, 1937; Ph.D., Cornell University, 1941; Assistant Professor of Chemistry and Chairman.

MAZLISH, BRUCE; B.A., Columbia College, 1944; Instructor in History.

MAZLISH, CONSTANCE SHAW; A.B., Smith College, 1944; Instructor in Spanish.

MCGRAVES, DONALD ESTY; B.A. in Ed., Maine, 1938; Instructor in English.

MCKAY, EDGAR BURNHAM; B.S., Colby, 1930; Instructor in Social Science.

MEHLHORN, HERBERT ANTHONY; A.B., Harvard, 1945; Instructor in Physics.

MULLANEY, JOHN THOMAS; Captain, Infantry, U. S. Army; B.S., University of Connecticut, 1943; Assistant Professor of Military Science and Tactics.

NASON, EVERETT HERRICK; B.S. in Ed., Maine, 1940; Instructor in Engineering Drafting.

OLESON, FREDERICK BARBOUR; B.A., Colby, 1938; M.S., Maine, 1940; Assistant Professor of Physics and Chairman.

PAQUET, VICTOR HUGO; B.S., Colby, 1933; Instructor in Engineering Drafting.

RAYMOND, ROBERT EDWARD; B.S., Springfield College, 1937; Supervisor of Athletics and Recreation.

REES, JAMES RICHARD; A.B., Carson Newman College, 1935; M.A., New York University, 1947; Instructor in Zoology.

RILEY, ELIZABETH DOBLER; Gymnasium in Munich, 1919; University of Munich, Germany; Instructor in Spanish and German.

RODGERS, JESSE ANDREW; First Sergeant (D.E.M.L.), U. S. Army; Instructor in Military Science and Tactics.

*RUNION, HOWARD LUCIUS; A.B., University of Michigan, 1931; M.A., 1932; Ph.D., 1936; Professor and Head of Department of Speech.

SASS, BERNARD; B.S., City College of New York, 1934; M.A., Teachers' College, Columbia, 1936; Instructor in Zoology.

SAWYER, ALBERT KENDALL; B.A., Colby, 1940; M.S., Maine, 1947; Instructor in Chemistry.

SCOTT, LEWIS BURLEIGH; B.S., Maine, 1943; M.A., Columbia, 1947; Instructor in English.

*SMYTH, JOHN ROBERT; B.S., Purdue, 1920; M.S., Kentucky, 1928; Professor and Head of Department of Poultry Husbandry.

*SPEICHER, BENJAMIN ROBERT; A.B., Denison, 1929; M.S., Pittsburgh, 1931; Ph.D., 1933; Professor and Head of Department of Zoology.

STANHOPE, BARBARA; A.B., Bates, 1942; Instructor in English.

*STARR, WILMARTH HOLT; B.A., Wesleyan, 1934; Ph.D., Johns Hopkins, 1937; Professor of Romance Languages and Head of Department of Modern Languages and Classics.

*STEINMETZ, FERDINAND HENRY; B.S., Illinois, 1915; M.S., Minnesota, 1921; Ph.D., 1926; Professor of Botany and Head of Department of Botany and Entomology.

THORNDIKE, SAMUEL LOTHROP; A.B., Harvard, 1927; Ph.D., University of California, 1932; Assistant Professor of Mathematics.

TICE, KENNETH ROSWELL; B.S., Aurora College, 1943; Instructor in Zoology.

TREVETT, MOODY FRANCIS (1946); B.S., Massachusetts State, 1929; M.S., 1940; Assistant Professor of Agronomy; 9 Agricultural Engineering Building.

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* At Orono Campus.

*Turner, Albert Morton; A.B., Harvard, 1912; A.M., 1914; Ph.D., 1920; Professor of English and Comparative Literature and Head of Department of English.

*Waring, James Howard; B.S., Pennsylvania State, 1920; M.S., 1921; Ph.D., Michigan State College, 1930; Professor and Head of Department of Horticulture.

Wence, Milford Edward; B.A., State University of Iowa, 1933; M.A., 1934; Ph.D., 1937; Associate Professor of English and Chairman.

Wendt, Mark Carl; B.E., Yale, 1946; Instructor in Engineering Drafting.

Whiting, William Lawrence; B.A., Maine, 1937; Instructor in Mathematics.

Zabilski, Joseph Peter; B.S. in Ed., Boston College, 1941; Instructor in Physical Education.

AGRICULTURAL ADVISORY COUNCIL

Appointive Members	Terms Expire
Mr. Thomas Murray, Hampden	December 31, 1947
Mr. Francis Buzzell, Fryeburg	December 31, 1947
Mr. Wilson M. Morse, Waterford	December 31, 1948
Mr. Seavey A. Piper, Troy	December 31, 1948
Mr. Harold J. Shaw, Sanford	December 31, 1948
Mr. A. Russell Mace, Aurora	December 31, 1949
Mrs. Marjorie E. Wilder, Norridgewock	December 31, 1949
Mr. Milton C. Smith, Presque Isle	December 31, 1950
Mr. Clarence Parker, Sebec	December 31, 1950
Mrs. Dorothy M. Payson, Fairways, Falmouth Foreside	December 31, 1950

Ex Officio	
President, University of Maine	Arthur A. Hauck
Trustee Member	Frank W. Hussey
Commissioner of Agriculture	Albert K. Gardner
Dean of Agriculture	Arthur L. Deering

Agricultural Advisory Committee

President, University of Maine	Arthur A. Hauck
Dean of Agriculture	Arthur L. Deering
Director of Agricultural Experiment Station	Fred Griffee
Assistant Director of Extension Service	George E. Lord

MAINE AGRICULTURAL EXPERIMENT STATION

FACULTY OF INVESTIGATION

Ashman, Robert Irving, A.B., Cornell University, 1913; M.F., Yale, 1929; Forester.

* At Orono Campus.

Bailey, Russell Manley, B.S., Maine, 1928; Associate Geneticist.
Baker, Gregory, B.S., Maine, 1924; M.F., Yale, 1939; Associate Forester.
Bartlett, Howard Delano, B.S. (Agricultural Engineering), Maine, 1944; B.S. (Civil Engineering), 1947; Assistant in Agricultural Engineering.
Beyer, Frank Kemp, B.S., Cornell University, 1929; M.S., University of Wisconsin, 1930; Assistant Forester.
Bonde, Reiner, B.S., Minnesota, 1922; M.S., Maine, 1926; Ph.D., Minnesota, 1938; Plant Pathologist.
Carpenter, Paul Nathaniel, B.S., Bates, 1933; Assistant Agronomist.
Clayton, Mary Morris, B.S., Columbia, 1918; M.S., Rochester, 1926; Ph.D., 1929; Nutritionist.
Cobb, Roger Madison, B.S., Massachusetts State, 1927; Assistant in Entomology.
Deering, Arthur Lowell, B.S., Maine, 1912; Sc.D., 1934; Dean of Agriculture.
Dickey, Howard Chester, B.S., Michigan State, 1934; M.S., West Virginia University, 1936; Ph.D., Iowa State, 1939; Animal Husbandman.
Dirks, Charles Orville, B.S., Kansas State, 1924; M.S., Iowa State, 1925; Ph.D., Cornell, 1935; Associate Entomologist.
Dorsey, Llewellyn Morse, B.S., Maine, 1916; M.S., 1923; Associate Dairy Husbandman.
Dow, George Farrington, B.S., Maine, 1927; M.S., 1929; Ph.D., Cornell University, 1938; Agricultural Economist and Assistant Director.
Folsom, Donald, A.B., Nebraska, 1912; M.A., Minnesota, 1914; Ph.D., 1917; Plant Pathologist, member of Graduate Faculty.
Getchell, Amasa Stanley, B.S., Maine, 1938; M.S., 1940; Assistant in Chemistry.
Getchell, John Simmons, B.A., Maine, 1936; M.S., 1939; Associate Bacteriologist.
Greene, Pearl Stuart, B.A., Northwestern, 1909; B.S., Lewis Institute, 1914; A.M., Columbia, 1923; Home Economist.
Griffee, Fred, B.S., Kansas State, 1919; M.S., Minnesota, 1920; Ph.D., 1924; Director, member of Graduate Faculty.
Hall, Howe Wiggin, B.S., Maine, 1914; M.S., 1925; Assistant Animal Husbandman.
Hawkins, John Henry, B.S., Illinois, 1926; M.S., Maine, 1927; Ph.D., Cornell University, 1935; Associate Entomologist.
Highlands, Matthew Edward, B.S., Maine, 1928; S.M,. Massachusetts Institute of Technology, 1934; Associate Food Technologist.
Hilborn, Merle Tyson, B.S., Maine, 1932; M.S., 1934; Ph.D., Yale, 1940; Associate Plant Pathologist.
Hitz, Chester Wood, B.S., University of Missouri, 1936; M.S., University of Maryland, 1938; Ph.D., 1941; Associate Horticulturist.
Howes, Cecil Edgar, B.S., Maine, 1941; Assistant in Poultry Husbandry.
Hyland, Fay, B.S., Michigan State, 1925; M.S., Maine, 1929; Seed Analyst.
Junkins, Stanley Clair, B.S., Maine, 1944; Assistant in Agronomy.
Lathrop, Frank Heidtman, B.S., Clemson, 1913; M.S., Ohio State, 1915; Ph.D., 1923; Entomologist.
Libby, Winthrop Charles, B.S., Maine, 1932; M.S., 1933; Agronomist.
Luke, Henry Alan, B.S., Utah, 1941; M.S., Cornell University, 1943; Ph.D., 1947; Associate Agricultural Economist.
Merchant, Charles Henry, B.S., Cornell University, 1920; M.S., 1922; Ph.D., 1928; Agricultural Economist.

MERRILL, EDWARD OSGOOD, B.S., Maine, 1938; Assistant in Chemistry.
MONROE, MERNA MYRTHA, B.S., Iowa State, 1929; M.S., Kansas State, 1932; Assistant Home Economist.
MOORE, MILLARD GEORGE, B.S., Maine, 1919; M.S., 1930; Assistant Chemist.
MORAN, CHARLES HENRY, B.S., Massachusetts State, 1936; M.S., 1939; Associate Agronomist.
MURPHY, ELIZABETH FLORENCE, B.A., Maine, 1930; M.A., 1934; Assistant Biologist.
PLUMMER, BERNIE ELLIOTT, JR., B.S., Maine, 1924; M.S., 1925; Chemist.
PORTER, WESLEY FLETCHER, B.S., Maine, 1923; Collaborator in Entomology.
PRINCE, ALTON ERNEST, B.S., Maine, 1936; M.S., 1938; Ph.D., Harvard, 1940; Assistant Plant Physiologist.
SCHRUMPF, WILLIAM ERNEST, B.S., Maine, 1928; M.S., 1930; Assistant Agricultural Economist.
SIMPSON, GEDDES WILSON, A.B., Bucknell, 1929; A.M., Cornell University, 1931; Ph.D., 1935; Associate Entomologist.
SMYTH, JOHN ROBERT, B.S., Purdue, 1920; M.S., Kentucky, 1928; Poultry Husbandman.
STRUCHTEMEYER, ROLAND AUGUST, B.S., University of Missouri, 1939; M.A., 1941; Assistant Agronomist.
TERMAN, GILBERT LEROY, B.S., Kansas State, 1938; Ph.D., Wisconsin, 1941; Agronomist.
TOBEY, ELMER ROBERT, B.S., Maine, 1911; M.S., 1917; Ch.E., 1920; Chemist.
TREVETT, MOODY FRANCIS, B.S., Massachusetts State, 1929; M.S., 1940; Assistant Agronomist.
ULLMAN, DOROTHY EDITH, B.S., New Jersey College for Women, 1947; Assistant in Nutrition.
WATSON, ANDREW ELWELL, B.S., Maine, 1934; M.S., 1936; Assistant Agricultural Economist.
WESCOTT, JOHN PUTNAM, B.S., Maine, 1947; Assistant in Agronomy.
WHITE, CHARLES HARRY, Ph.C., Maine, 1899; Associate Chemist.
WITTER, JOHN FRANKLIN, B.S., University of Maryland, 1928; D.V.M., Michigan State, 1932; Associate Animal Pathologist.
WOODWARD, HOMER CLAY, B.S., Maine, 1942; M.S., 1947; Assistant Agricultural Economist.

MAINE TECHNOLOGY EXPERIMENT STATION

BOARD OF CONTROL

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LYLE CLAYTON JENNESS, M.S.	†Department of Industrial Cooperation
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CLARENCE EDWIN BENNETT, Sc.M., Ph.D.	Department of Engineering Physics
HARRY DEXTER WATSON, M.S.	Department of Mechanical Engineering

* Acting Head.
† Acting Director.

MEMBERS OF THE STATION STAFF

OLIVER AXTELL, M.S., Instructor in Chemical Engineering.
HERBERT FREEDMAN, B.S., Assistant Chemist, Highway Laboratory.
EARL W. FULLER, B.S., Research Assistant, Maine Geological Survey.
HAMILTON GRAY, Sc.D., Professor of Civil Engineering; Soils Engineer, Maine State Highway Commission.
ARTHUR ST. JOHN HILL, E.E., M.S.E., Professor of Electrical Engineering.
ALPHEUS CROSBY LYON, JR., B.S., Assistant Engineer, Highway Laboratory.
HORACE ASA PRATT, M.S., Secretary and Engineer; Testing Engineer, Maine State Highway Commission.
WENTWORTH HENRY SCHOFIELD, JR., B.S., Instructor in Mechanical Engineering.
STANLEY JOSEPH SMITH, Technician, Highway Laboratory.
ROGER MAXIM STINCHFIELD, M.S., Instructor in Chemical Engineering, and Research Assistant, Department of Industrial Cooperation.
EDWARD FREDERICK THODE, Sc.D., Assistant Professor of Chemical Engineering.
JOSEPH MUZZY TREFETHEN, Ph.D., Professor of Geology in the Department of Civil Engineering; State Geologist.

Industrial Research Fellows

HSIANG-CHU CHUNG, B.S., Chemical Engineering
HENRY HARRISON FOGLER, B.S., Chemical Engineering
FRED HERBOLZHEIMER, JR., B.S., Chemical Engineering
ROBERT DALE INGALLS, B.S., Chemical Engineering
ROBERT WILLIAM NELSON, B.S., Chemical Engineering
THOMAS ELMER PARMENTER, B.S., Chemical Engineering
ROBERT DECATUR PARSONS, B.S., Chemical Engineering

DEPARTMENT OF INDUSTRIAL COOPERATION

INDUSTRIAL ADVISORY COUNCIL

APPOINTIVE MEMBERS:
LUCIUS D. BARROWS, Chief Engineer, State Highway Commission, Augusta.
JOHN L. BAXTER, President, H. C. Baxter and Brothers, Brunswick.
WILLARD H. CUMMINGS, President and Treasurer, Daniel E. Cummings Company, Newport.
FREDERICK H. FROST, Manager of Research, S. D. Warren Company, Cumberland Mills.
BRYANT L. HOPKINS, Hydraulic Engineer, Waterville.
WILBUR L. MERRILL (Former Head, General Electric Co. Works Laboratory), Kezar Falls.
CLIFFORD PATCH, Technical Director, Eastern Corporation, Bangor.
CARROLL B. PEACOCK, President, R. J. Peacock Canning Company, Lubec.
EDWARD E. SAWYER, Chief Chemist, Keyes Fibre Company, Waterville.
ARTHUR N. STOWELL, Vice President, Timberlands, Incorporated, Dixfield.
WILLIAM WATSON, Textile Research Director, Maine Mills Laboratory, Lewiston.

Ex Officio Members:

Chairman, Maine Development Commission	Robert N. Haskell
From the University of Maine	
President	Arthur A. Hauck
Member, Board of Trustees	George S. Williams
Dean, College of Technology	Paul Cloke
Acting Director, Department of Industrial Cooperation	Lyle C. Jenness

INDUSTRIAL RESEARCH COMMITTEE

Lyle C. Jenness, Acting Director, Department of Industrial Cooperation.
Paul Cloke, Dean, College of Technology; Director, Technology Experiment Station.
Arthur L. Deering, Dean, College of Agriculture.
Fred Griffee, Director, Agricultural Experiment Station.
Robert I. Ashman, Head, Department of Forestry.
Clarence E. Bennett, Head, Department of Physics.
Walter J. Creamer, Head, Department of Electrical Engineering.
Irwin B. Douglass, Head, Department of Chemistry.
Weston S. Evans, Head, Department of Civil Engineering.
Himy B. Kirshen, Head, Department of Economics.
Harry D. Watson, Head, Department of Mechanical Engineering.

FACULTY OF EXTENSION SERVICE

(College of Agriculture)

Arthur Lowell Deering, B.S., Maine, 1912; Sc.D., 1934; Director.
George Edgar Lord, B.S., Maine, 1924; Assistant Director.

State Agents

Raymon Neale Atherton, B.S., Maine, 1918; Extension Economist, Marketing.
Kathryn Elizabeth Briwa, A.B., Vassar, 1915; M.A., Columbia, 1929; Ph.D., 1940; Foods Specialist.
Constance Blakely Burgess, B.S., Wayne University, 1939; M.S., Cornell University, 1943; Home Management Specialist.
Ralph Ashton Corbett, B.S., Maine, 1930; Assistant Dairy Specialist.
Clarence Albert Day, M.S., Maine, 1929; Extension Editor.
Richard Carlton Dolloff, B.S., Maine, 1927; County Agent Leader.
Edward Wilbur Foss, B.S., New Hampshire, 1936; Extension Agricultural Engineer.
Joseph Clifton Hickey, B.S., Cornell, 1943; Vegetable and Canning Crops Specialist.
Chester Wood Hitz, B.S., University of Missouri, 1936; M.S., University of Maryland, 1938; Ph.D., 1941; Extension Horticultural Specialist.
Kenneth Cousins Lovejoy, B.S., Maine, 1928; State Club Leader.
Smith Charles McIntire, B.S., Maine, 1932; State Supervisor, Emergency Farm Labor.
John Wilbur Manchester, B.A., American University, 1943; Assistant Extension Editor.

Stacy Ross Miller, B.S., Maine, 1932; Executive Secretary.
Estelle Nason, B.S., Maine, 1922; Home Demonstration Agent Leader.
Albert Deane Nutting, B.S., Maine, 1927; Forestry Specialist.
Philip Stewart Parsons, B.S., Maine, 1934; Farm Management Specialist.
Frank Dudley Reed, B.S., New Hampshire, 1929; Poultry Specialist.
Charlotte Cleaves Smith, B.S., Maine, 1931; Clothing Specialist.
Richard Foster Talbot, B.S., Maine, 1907; Dairy Specialist.
Oscar Lewis Wyman, B.S., Maine, 1926; Crops Specialist.

County Agents

Robert Patrick Ahern, B.S., New Hampshire, 1938; York County.
Verne Curtis Beverly, B.S., Maine, 1920; Aroostook County.
Raymond Frederick Delano, B.S., Maine, 1941; Kennebec County.
Clement Stevens Dunning, B.S., Maine, 1947; Assistant, Aroostook County.
Charles Leslie Eastman, B.S., Maine, 1922; Androscoggin and Sagadahoc Counties.
Robert Morris Grover, B.S., Vermont, 1943; Somerset County.
Boyd Henry Hempen, B.S., Illinois, 1942; County Agent at Large.
Fred Edward Holt, B.S., Maine, 1940; Washington County.
Herbert Arthur Leonard, B.S., Maine, 1939; Oxford County.
Norman Renfrew Ness, B.S., Maine, 1938; Franklin County.
Lewis Pollard Roberts, B.S., Maine, 1931; Piscataquis County.
Carl Aden Rogers, B.S., Vermont, 1935; Hancock County.
Wilfred Sherman Rowe, Cumberland County.
Clarence Edward Shepard, B.S., Cornell University, 1943; Penobscot County.
Fred Lot Webster, Waldo County.
Ralph Carlton Wentworth, B.S., Maine, 1918; Knox and Lincoln Counties.
Carl Allen Worthley, B.S., Maine, 1936; Assistant, Aroostook County.

Home Demonstration Agents

Avis Eldora Anderson, B.S., Maine, 1944; Somerset County.
Louisa Mae Bacon, B.S., Maine, 1947; Kennebec County.
Beryl Hazel Barton, B.S., Massachusetts State, 1940; Androscoggin and Sagadahoc Counties.
Muriel Elaine Beale, B.S., Farmington State Normal, 1939, Waldo County.
Leona Perry Bradford, B.S., Farmington State Normal, 1942; Penobscot County.
Constance Elaine Cooper, B.S., Maine, 1946; District Agent; Knox and Lincoln Counties.
Sara Mary Curtis, B.S., Farmington State Normal, 1938; Washington County.
Shirley Marshall Kendall, B.S., Nasson College, 1945; Piscataquis County.
Olga Marie Lemke, B.S., Farmington State Normal, 1935; York County.
Sarah Wells Littlefield, B.S., Maine, 1938; Cumberland County.
Hope Mae Moody, B.S., Maine, 1942; Oxford County.
Adelaide Louise Newcomb, B.S., Farmington State Normal, 1943; Hancock County.
Harriet Jane Nissen, B.S., Nasson College, 1941; Assistant, Aroostook County.
Effie Marie Nutter, B.S., Maine, 1947; Assistant, Aroostook County.
Florence Elizabeth Teahan, B.S., Framingham State Teachers' College, 1945; Aroostook County.

Club Agents

KEITH MALCOLM BATES, B.S., Maine, 1938; Oxford County.
LOIS ADELE COHOON, Farmington State Teachers College, 1945; Waldo County.
JUSTINA DELORES DONOVAN, B.S., Nasson College, 1945; Penobscot County.
JAMES ALBERT GOLDEN, JR., B.S., St. Lawrence University, 1942; Cumberland County.
MARGARET GOSLINE, B.S., Nasson College, 1946; Piscataquis County.
HAZEL THELMA KING, B.S., Maine, 1942; Franklin County.
EARL BERFIELD LANGLEY, B.S., Maine, 1943; York County.
AUBERY ALTON MCLAUGHLIN, B.S., Maine, 1947; Kennebec County.
MADELINE PHYLLIS NEVERS, B.S., Maine, 1945; Androscoggin and Sagadahoc Counties.
NOREEN ANGELA RAY, B.S., New Hampshire, 1945; Somerset County.
LEONA SPEARIN SHIBLES, Castine Normal, 1926; Knox and Lincoln Counties.
MADELEINE ELAINE STEPHENSON, Hancock County.
JOHN FRANCIS WHITTEN, B.S., Maine, 1947; Aroostook County.

FACULTY COMMITTEES

1947–1948

ADMINISTRATION—President, College Deans, Dean of Graduate Study, Dean of Men, Dean of Women, Assistant to the President, Business Manager, Registrar, Treasurer.
ADMISSIONS AND SECONDARY SCHOOL RELATIONS—Shibles, Cloke, Crane, Deering, Murray.
ASSEMBLIES—Crossland, Gray, Hawley, Richard Hill, Winthrop Libby, Sprague, Albert Turner.
ATHLETICS—Wieman, Nutting, Maynard Jordan, Harry Watson.
COE RESEARCH FUND—Dickinson, Brush, Gray, Griffee, Arthur Hill, Hitchner, Speicher, Steinmetz, Trefethen.
ELIGIBILITY—Gannett, Curtis, Sprague, Wilson, Wieman.
HEALTH—Wieman, Cornell, Lengyel, Ryckman, Wallace, Wilson.
MAINE STUDIES—Hitchner, Brush, Douglass, Ibbotson, Kirshen, Leavitt, Albert Turner.
PUBLICITY—Keyo, Day, Griffee, Joseph Hall, Wayne Jordan, Kenneth Parsons.
RADIO—Crossland, Day, Keyo, Lathrop, Runion, Selwood.
SCHEDULE—Gannett, Dorsey, Evans, Maynard Jordan, College Deans.
SCHOLARSHIPS—Lamoreau, Crane, Crawford, Ruth Crosby, Greene, Loring, Prageman, Tebbe.
SOCIAL AFFAIRS—Stewart, Cassidy, Howes, McNeary, O'Connor, Wieman, Wilson, Worrick.
STUDENT PUBLICATIONS—Wayne Jordan, Keyo, Irving Pierce, Reynolds.
VETERANS' AFFAIRS—Small, Giddings, Pike, Ryckman, Schofield, Starr.
WOMEN STUDENTS—Wilson, Buzzell, Comegys, Lengyel, Katherine Miles, Stedman.

GENERAL INFORMATION

General Information

The University of Maine is a part of the public educational system of the State. It is located in Orono, an attractive town of 3,700 population, about half way between Kittery, the most southerly town in the State, and Fort Kent on the northern boundary.

The extensive campus of over two hundred acres is situated about a mile from the business section of Orono and borders the Stillwater River, a branch of the Penobscot. The University is approximately eight miles from Bangor, the third largest city of the State, on U. S. Route 2.

History.—The University was established originally as the State College of Agriculture and the Mechanic Arts under the provisions of the Morrill Act, approved by President Lincoln in 1862. The next year the State of Maine accepted the conditions of the Act and in 1865 created a corporation to administer the affairs of the college. The original name was changed to the University of Maine in 1897.

The institution opened September 21, 1868, with twelve students and two faculty members; Dr. Merritt Caldwell Fernald was appointed acting president. By 1871 curricula had been arranged in Agriculture, Civil Engineering, Mechanical Engineering, and Elective. From these curricula there gradually developed the Colleges of Agriculture, Technology, and Arts and Sciences. Women have been admitted as students since 1872. The School of Education was established in 1930. The College of Law was extant from 1898 to 1920.

The Maine Agricultural Experiment Station was established as a division of the University by act of the Legislature of 1887, as a result of the passage by Congress of the Hatch Act. It succeeded the Maine Fertilizer Control and Agricultural Experiment Station, which had been established in 1885.

Graduate instruction has been given by various departments for many years. The first master's degree was conferred in 1881. Since 1923 graduate work has been a separate division in charge of a dean.

Beginning with 1902, a Summer Session has usually been held annually, consisting at first of five weeks, but now of six, with a Post-Session of three additional weeks. It is designed primarily for teachers and educational administrators and for college students who desire to make up work.

To provide permanently for the support of the University, the Legislature in 1929 passed an act levying a tax of one mill on the general property valuation of the State.

The institution has been served by the following presidents: Rev. Charles Frederick Allen, Dr. Merritt Caldwell Fernald, Dr. Abram Winegardner Harris, Dr. George Emory Fellows, Dr. Robert Judson Aley, Dr. Clarence Cook Little, Dr. Harold Sherburne Boardman, and Dr. Arthur Andrew Hauck.

Organization of the University.—The University is controlled by a Board of Trustees. Seven members are appointed by the Governor of the State, with the advice and consent of the Council, for a term of seven years. One member is appointed for three years by the Governor upon the nomination of the Alumni Association. The Commissioner of Education is ex officio a member of the Board. The Board of Trustees has supreme authority in all matters pertaining to the University, and all policies applying to the University as a whole must be approved by the Board. Administrative units of the University include the Colleges of Agriculture,

Arts and Sciences, and Technology, School of Education, Graduate Study, Summer Session, Agricultural Extension Service, Maine Agricultural Experiment Station, Maine Technology Experiment Station, and Department of Industrial Cooperation. Each division regulates those affairs which concern itself alone.

THE COLLEGE OF AGRICULTURE offers four-year curricula in Agricultural Economics and Farm Management, Agricultural Education, Agricultural Engineering, Agronomy, Animal Husbandry, Bacteriology, Biochemistry, Botany, Dairy Husbandry, Dairy Technology, Entomology, Forestry, General Agriculture, Home Economics, Horticulture, Poultry Husbandry, and Wildlife Conservation. It also offers a Two-year Course in Agriculture, Short Courses in Agriculture, and annually holds Farm and Home Week.

THE COLLEGE OF ARTS AND SCIENCES offers curricula in an approved field of concentration or in any of the following subjects: Art, Business Administration, Chemistry, Economics, English, Geology, German, Government, History, Journalism, Mathematics, Music, Philosophy, Physics, Psychology, Romance Languages, Sociology, Speech, Theatre, and Zoology. The College also offers, in cooperation with the Central Maine General Hospital and the Eastern Maine General Hospital, a five-year program for nurses. A three-year course in nursing is offered in cooperation with the Eastern Maine General Hospital.

THE COLLEGE OF TECHNOLOGY offers curricula in Chemical Engineering, with an option in Pulp and Paper Technology; Chemistry; Civil Engineering, with options in Highway Engineering, Sanitary Engineering, Light Building Construction, and City Management; Electrical Engineering, with elective groups of studies in Communication and Power; Engineering Physics; General Engineering; and Mechanical Engineering.

THE SCHOOL OF EDUCATION offers professional training for secondary-school teachers and prospective principals and supervisors in the public schools, and to a limited extent in elementary education. The degree of Bachelor of Arts in Education is given for those who have spent at least two years in a liberal arts college, and the degree of Bachelor of Science in Education for those who transfer from normal schools or other types of institutions.

Special curricula are also offered in commercial education, in music education, and in fine arts education for students transferring from approved institutions.

THE FACULTY OF GRADUATE STUDY offers programs of study leading to the degrees of Master of Arts, Master of Science, and Master of Education. The professional degrees of Chemical Engineer, Civil Engineer, Electrical Engineer, Forest Engineer, and Mechanical Engineer are granted upon completion of the appropriate requirements.

THE SUMMER SESSION offers a wide variety of academic and educational courses. College students by enrolling in selected subjects can accelerate graduation. For teachers and school administrators there are workshops in elementary and secondary education as well as numerous other courses especially designed for those engaged in the teaching profession.

THE AGRICULTURAL EXTENSION SERVICE conducts extension work in agriculture, forestry, and home economics in cooperation with the U. S. Department of Agriculture and the county farm bureaus. It has headquarters on the University campus and county offices that serve all of the counties in Maine.

THE MAINE AGRICULTURAL EXPERIMENT STATION maintains its offices and principal laboratories at Orono. Experimental farms include Highmoor Farm at

Monmouth, Aroostook Farm at Presque Isle, Chapman Farm at Chapman, and Blueberry Farm at Jonesboro.

THE MAINE TECHNOLOGY EXPERIMENT STATION maintains its offices and laboratories at Orono.

Buildings.—The following are dormitories for women.

BALENTINE HALL (1914-1916) has accommodations for one hundred and twenty-two students and also contains an infirmary. It was named in honor of Elizabeth Abbott Balentine, secretary and registrar of the University, 1894-1913.

COLVIN HALL (1930) has accommodations for fifty-seven students. It was named in honor of Dr. Caroline Colvin, Professor Emeritus of History and Government and the first dean of women at the University.

ESTABROOKE HALL (1940) has accommodations for eighty students, in each of its two sections. It was named in honor of Kate Clark Estabrooke, a former superintendent of the first women's dormitory, the Mount Vernon House.

EAST AND WEST HALLS (1946) have rooms for one hundred and forty students. They are temporary dormitories acquired through the Federal Public Housing Authority.

THE ELMS has accommodations for fifty-five students. It is a cooperative dormitory.

The following are dormitories for men.

HANNIBAL HAMLIN HALL (1911) has accommodations for ninety-five students. It was named for the Hon. Hannibal Hamlin, of Hampden and Bangor, the first president of the Board of Trustees.

OAK HALL (1937) has accommodations for ninety-five students. This building, like the "Oak Hall" built in 1871, which it replaces, is named for the Hon. Lyndon Oak, of Garland, a long-time member and president of the Board of Trustees.

CORBETT HALL (1947) has accommodations for two hundred and twenty-six students. It is named in honor of Dean Lamert Seymour Corbett, formerly Professor of Animal Industry and Dean of Men.

DUNN HALL (1947) has accommodations for two hundred and twenty-six students and was named in honor of Charles John Dunn, formerly Chief Justice of the Supreme Judicial Court of Maine and Treasurer of the University from 1909 to 1923.

NORTH DORMITORIES (1946) have rooms for seven hundred seventy-five men. These temporary dormitories were provided by the Federal Public Housing Authority.

A new dormitory to accommodate about 150 students will be ready for occupancy at the opening of the summer session in 1948.

The following are apartments for married students:

THE SOUTH APARTMENTS (1946) provide apartments for one hundred and ninety-six families. These facilities were acquired through the Federal Public Housing Authority.

THE TRAILER COLONY (1945) provides accommodations for thirty-two families. These trailers were acquired through the Federal Public Housing Authority.

THE UNIVERSITY CABINS (1945) have accommodations for eleven families.

The following are used mainly for administration and instruction.

ALUMNI HALL (1901) contains administrative offices, the gymnasium for

women, and the Little Theatre. It received its name because of contributions made by alumni to supply a part of the funds for its erection.

ALUMNI MEMORIAL, consisting of an Indoor Field, Armory, and Gymnasium, was erected as a memorial to the Maine men who died in the service of their country in the Spanish-American and World War I and is the gift of alumni, students, faculty, and friends of the University. The Indoor Field (1926), one of the largest in the country, provides ample facilities for indoor track, winter baseball practice, and military drill. The Armory (1926) houses offices and classrooms of the military unit, including an indoor rifle range. The Gymnasium (1933) contains the offices of the Athletic and Physical Education departments, equipment and rooms for handball, boxing, wrestling, and corrective exercise, shower and locker rooms, and an auditorium with a seating capacity of approximately 2500, used for basketball, lectures, student assemblies, banquets, and dances.

AUBERT HALL (1914) houses the Departments of Chemistry and Chemical Engineering, including the Pulp and Paper Division, and Physics. It was named in honor of Alfred Bellamy Aubert, professor of chemistry from 1874 to 1909. A wing was added in 1940 to increase the facilities in Chemical Engineering and the Pulp and Paper Division.

CARNEGIE HALL (1947), the former library building erected in 1906 through the generosity of Andrew Carnegie, is now devoted to the departments of Arts and Music, and is also used as a student center. It is named in honor of the original donor.

COBURN HALL (1888) houses the Department of Botany and Entomology and the Department of Zoology. It was named for the Hon. Abner Coburn, a former president of the Board of Trustees and benefactor of the University.

CROSBY LABORATORY (1928) contains the laboratories of the Department of Mechanical Engineering. It was named for the Hon. Oliver Crosby, Class of '76, who bequeathed $100,000 for its construction.

EAST ANNEX (1947) provides class rooms, laboratories, a drawing room, and offices for the several colleges. The building, formerly a unit of the Naval base at Sanford, was erected on the campus by the Bureau of Community Facilities of the Federal Works Agency.

FERNALD HALL (1870), the oldest building on the campus, contains offices and classrooms used by the College of Technology, the University Store, and the quarters of the Health Service. It was named in honor of former President Merritt Caldwell Fernald.

HOLMES HALL (1888) is the building used by the Maine Agricultural Experiment Station. It received its name from Dr. Ezekiel Holmes, writer, editor, and pioneer in Maine agriculture.

LIBRARY BUILDING (1947) was erected and furnished largely as a result of a fund raising campaign by alumni, faculty, students, and friends of the University.

LORD HALL (1904) is used by the Departments of Electrical Engineering and Mechanical Engineering. It was named for the Hon. Henry Lord, a former president of the Board of Trustees.

MERRILL HALL (1931) is used for work in Home Economics. It was named for Dr. Leon S. Merrill, dean of the College of Agriculture from 1911 to 1933.

ROGERS HALL (1928) houses the divisions of Animal Husbandry and Dairy Husbandry of the Department of Animal Industry and contains laboratories for the manufacture of dairy products. It was named in honor of Dr. Lore A. Rogers,

Class of '96, chief of research laboratories (retired), Bureau of Dairy Industry, U. S. Department of Agriculture.

STEVENS HALL (1924), with two wings constructed in 1933, supplies accommodations for the larger part of the work of the College of Arts and Sciences and also the School of Education. It was named in honor of Dr. James S. Stevens, for many years dean of the College of Arts and Sciences.

WINGATE HALL (1892) is used by the Department of Civil Engineering and in addition contains the Technology Experiment Station Laboratories. It was named for the Hon. William P. Wingate, a former president of the Board of Trustees.

WINSLOW HALL (1909) is used by the College of Agriculture and the Extension Service. It was named for the Hon. Edward B. Winslow, of Portland, a former president of the Board of Trustees.

Other buildings include the Agricultural Engineering Building, Horticultural Greenhouses, Dairy Barns and Milk House, Poultry Buildings, Research Building, Stock Judging Pavilion, Mechanical Engineering Shops, Maine Christian Association Building, Observatory, Men's Infirmary, Print Shop, Home Management House, the Central Heating Plant, the President's House, several residences occupied by faculty members, and various farm buildings.

FRATERNITY HOUSES.—The following fraternities have houses on or near the campus: Beta Theta Pi, Delta Tau Delta, Kappa Sigma, Lambda Chi Alpha, Phi Kappa Sigma, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Theta Chi, Phi Eta Kappa, Alpha Gamma Rho, Alpha Tau Omega, Phi Gamma Delta, and Phi Mu Delta.

Department of Industrial Cooperation.—The purpose of the department is to co-ordinate the academic and research facilities of the University for the prosecution of industrial research. Research investigations within the scope of the department take the form of contracted experimental and consulting work, fellowships or summer employment, that utilize the University facilities. An additional function of the department is to serve as a clearing house for all service to industries performed at the University.

ORGANIZATION.—The department is administered by a director who reports to the President of the University, to the Deans of the various Colleges, and to the Directors of the Experiment Stations in which industrial research is in progress. The director is assisted by staff members who initiate and conduct research, either in addition to their normal duties or by allocation of a part of their time to the department. The department receives guidance from two committees, a local committee and an industrial advisory council. The local committee is composed of University staff members, and the advisory council includes men who represent varied industrial interests in the State.

INDUSTRIAL FELLOWSHIPS recently established are as follows :

THE GOTTESMAN FOUNDATION FELLOWSHIP, an annual grant of $1,000 to be used for the encouragement and promotion of scientific and industrial research in the pulp and paper field. The expenditure of funds from this grant for scholarships, fellowships, and for the promotion of research is to be administered by the President of the University, the Director of the Department of Industrial Cooperation of the University, and a representative of the Eastern Corporation of Brewer, Maine.

THE EASTWOOD-NEALLEY FELLOWSHIP, established in 1944 by the Eastwood-Nealley Corporation of Belleville, New Jersey, is used for the encouragement of

scientific and industrial research. Projects undertaken with funds provided by the grants are determined by mutual agreement between the Company and the University of Maine.

The Coe Research Fund.—The Trustees of the University have set aside the sum of $100,000 to form a permanent fund, the income to be used by the faculty for carrying on various kinds of research work. Applications for grants from this fund should be addressed to Professor E. R. Hitchner, Secretary. It is hoped that this fund may later be increased by grants from other sources.

Athletic Facilities.—The University facilities for athletics and physical education include the Memorial Gymnasium, the Memorial Indoor Field House, the Women's Gymnasium, and athletic fields.

The athletic fields include seven clay tennis courts, one hard-surface tennis court, a baseball field, a football stadium, football practice fields, a quarter-mile cinder track, hammer and discus fields, intramural game fields, a two-mile-and-a half cross country course, and a four-mile cross country course. Skiing facilities include a ski jump, and a skating rink is maintained.

The athletic field for women on the southern end of the campus consists of a regulation hockey field, archery range, two tennis courts, and a large practice area. It is well lighted by flood lights for late afternoon activities. A field house contains a club room, a store room for athletic equipment, and a kitchenette. Besides serving for instruction and rest for teams not in action, it is used for picnics, social gatherings, and as a reading room.

Marine Station.—The University of Maine Marine Biological Station is located at East Lamoine on the northeast shore of Frenchman's Bay forty-five miles from the University. The buildings provide adequate housing for laboratories, research workers, students, and faculty.

University Farms and Livestock.—The University farms consist of approximately 900 acres divided into four farms, one of which adjoins the campus, while the others are located in the Stillwater section of Old Town. These farm lands together with the campus make the University holdings at Orono and vicinity about 1,020 acres. Land under cultivation amounts to 347 acres divided as follows: 258 acres in farm crops, 13 in orchard, 61 in improved pastures, 12 in poultry ranges, and 3 in gardens.

Modern dairy and livestock barns house 158 head of registered dairy cattle representative of the leading breeds, 16 registered beef cattle, 13 swine, 40 sheep, and four draft horses. Poultry houses accommodate about 3,000 laying birds.

University Forest.—The University forest, totaling 1,746 acres, located in the Stillwater-Old Town area, was acquired by lease from the federal government in 1939. It is administered by the Forestry Department for student instruction, project demonstration, and research. An additional 20 acres of forest on University owned land is under systematic forest management, and two acres are operated as a forest nursery by the State Forestry Department. A camp is operated by the Forestry Department for summer instruction purposes on Indian Township, a tract of 17,000 acres near Princeton.

The Library.—The University library contains an estimated 215,550 volumes and pamphlets, and receives currently about 1,250 periodicals. It is a depository for both state and federal documents. The library extends its resources to other libraries, to visiting scholars, and to graduates of the University, whenever it can do so without interference with local needs. As the result of a campaign by alumni, faculty, students, and friends of the University, a new library building was com-

pleted in 1947. It is estimated the present stack capacity will accommodate 250,000 volumes, with space for expansion to 450,000 volumes. The stacks at present provide 44 study carrells and eight study rooms.

The University Art Collection, started in the early 1900's by Dr. John H. Huddilston, Professor Emeritus of Ancient Civilization and Art History, now includes materials depicting the history of art through all ages to the present day. Over ten thousand photographs, large colored reproductions, and slides of art masterpieces are available to students and faculty for study and loan service.

Monthly exhibitions of original works by outstanding artists, with emphasis on various media and types of expression, are arranged and presented as part of the art program.

Scientific Collections.—The following collections are available for purposes of class use. The biological collections are located in Coburn Hall.

ZOOLOGY.—These collections consist of a working collection of bird skins, a display of bird mounts, and a study collection of various other groups of both vertebrates and invertebrates. The Anson Allen collections of Invertebrates and of Maine Birds, presented by Mrs. Mattie Munson, and the Eckstorm Collection of Birds, presented by Mrs. Fannie H. and Mrs. P. F. Eckstorm, form an important part of the whole.

BOTANY.—The herbarium includes several collections the most important of which is the one made by the late Rev. Joseph Blake and presented to the University by Mr. Jonathan G. Clark, of Bangor. The late Professor F. L. Harvey left to the herbarium the general collections accumulated during his connection with the University. Other important collections are Collins's Algae of the Maine Coast, Halsted's Lichens of New England, Halsted's Weeds, Ellis and Everhart's North American Fungi, Cook's Illustrative Fungi, Underwood's Hepaticae, and Cummings and Seymour's North American Lichens.

The herbarium has been enriched recently by the personal collections of Mrs. Frank Hinckley, Helen Paine Scoullar, Charles Curtis, Henry Wilson Merrill, Maynard Quimby, and Louise Coburn. Numerous Centuries of Plantae Exsiccatae Grayanae are significant additions.

GEOLOGY.—The geological collections of minerals, rocks, and fossils are housed on the second and third floors in Fernald Hall. One case containing mineralogical specimens is located in the Agricultural Engineering Building.

University Publications.—The following are included in the various bulletins and reports regularly issued by the University.

THE MAINE BULLETIN is issued monthly from August to May inclusive with two issues in the month of February and three issues in the month of March, to give information to the students, faculty, alumni, and the general public.

UNIVERSITY OF MAINE STUDIES, SECOND SERIES, consists of a series of research studies by members of the faculty and graduate students, published under the direction of the Faculty of Graduate Study.

THE ANNUAL REPORT OF THE AGRICULTURAL EXPERIMENT STATION gives a brief summary of the progress during the year on the various research projects together with pertinent weather and financial data. OTHER BULLETINS present results of completed studies or certain phases of studies for which data have been obtained sufficient to warrant conclusions.

OFFICIAL INSPECTIONS bulletins contain the results of the work of inspection of agricultural seeds, commercial feeding stuffs, commercial fertilizers, drugs, foods, fungicides and insecticides.

EXTENSION BULLETINS AND CIRCULARS are issued by the Agricultural Extension Service on a wide variety of subjects relating to agriculture, home economics, and boys' and girls' 4-H clubs. Any resident of Maine may secure a list of available bulletins and circulars upon request.

TECHNOLOGY EXPERIMENT STATION PUBLICATIONS consist of bulletins and papers giving the results of investigations and research, and are usually sent free of charge on request.

THE MAINE ALUMNUS, published monthly during the academic year by the General Alumni Association, is sent to former students of the University who subscribe through the payment of alumni dues.

Student publications are described in the section "Student Activities."

The University Placement Bureau.—This bureau was established in 1935 by the University in cooperation with the General Alumni Association to offer to graduates, students, and employers a centralized placement service. Purposes of the Bureau are: (1) to recommend students and graduates for employment in fields of work other than teaching; (2) to assist students in making contacts with business concerns in their chosen fields; (3) to cooperate with University departments in helping students to determine the kinds of employment for which they are best fitted. The Bureau also cooperates in securing part-time work during the college year and summer employment for undergraduates. No charge to students, first-year graduates, or employers is made, although a nominal fee to cover clerical costs is charged older alumni placed through the assistance of the Bureau.

The Placement Bureau for Teachers.—This Bureau undertakes to assist properly qualified graduates and former students in securing positions. Guidance is given to prospective candidates in compiling credentials essential to secure teaching positions. Service is rendered to teachers now employed in maintaining continuous professional records of achievement facilitating advanced placement. Officials who are seeking teachers are asked to correspond with the Bureau located in the office of the Dean of the School of Education, 22 Stevens Hall, South. No fee is charged for this service to students.

Dormitory Rooms.—The rooms in Balentine Hall and Estabrooke Hall accommodating one or two students each, and those in Colvin Hall, accommodating two or four students each, are available to women students. The rooms in the Elms, the cooperative dormitory for women, accommodate two or three students each. Selection for this dormitory is based on financial need, cooperation and satisfactory scholarship. East and West Halls, accommodating two students per room, are also available to women students.

Oak Hall, Hannibal Hamlin Hall, Corbett Hall, Dunn Hall, and the North Dormitories are available to men students. Rooms in the north section of Hannibal Hamlin Hall and the North Dormitories will accommodate two students each; those in Oak Hall, Corbett Hall, and Dunn Hall, three students each, and those in the south section of Hannibal Hamlin Hall four students each. Men assigned to these dormitories are expected to reside within the dormitory system for the complete semester unless relations with the University are terminated or permission is granted to withdraw to live in a fraternity house. Established dormitory regulations are to be observed at all times.

Students will furnish pillows, bed linen, and blankets. Dormitory residents may have their bed linen and towels laundered each week without extra charge.

Dormitories will be closed to students during scheduled recess periods.

Women students not living at home are required to live in one of the women's dormitories. In exceptional cases, women students are allowed to live at some boarding house approved by the Dean of Women.

Health Service.—A University Health Service is operated for the benefit of students. All students who pay the Health Service fee are entitled to certain services without further charge. These services include medical examination, clinic and dispensary service, and infirmary care. The University Health Service can not care for students suffering from chronic illnesses, those requiring surgical treatment, or those in need of the services of specialists. Such services must be arranged for outside the University. Students are free to consult with any physician of their choice, but services from doctors not on the University staff must be at the expense of the student requesting such services.

Use of Laboratory Apparatus.—Many laboratory courses involve instruction in and the use of various types of power equipment and laboratory apparatus. The University takes every precaution to provide competent instruction and supervision of such courses. It is expected that students will cooperate by following instructions and exercising precaution. In case an accident does occur, resulting in personal injury, the University can assume no responsibility except for medical care that is provided by the Student Health Service.

Registration.—Undergraduates will register in accordance with the following.

FRESHMEN.—All members of the incoming freshman class are required to attend the period known as Freshman Week. The dates are announced in the calendar in the front of the catalog. This period will be devoted to tests whereby the University authorities may obtain accurate information concerning the type and degree of mental qualifications of the new students, and to lectures and conferences by which the students may be more intelligently informed of the University and its customs.

About August 15 parents of each candidate admitted will receive from the Registrar's office a letter giving detailed instruction about arrangements for Freshman Week. Parents of candidates admitted after August 15 will receive the information at the time the candidate is admitted to the University.

UPPERCLASSMEN.—In the fall of 1948, upperclassmen will be required to register on the opening date or to present written evidence that they have been allowed by their dean to register late. In other words, upperclassmen must communicate in advance with the dean of their college giving their reason for wishing to register late, and have received from him written permission to do so. In the event of an unusual circumstance wholly beyond the control of the student, and occurring just prior to the opening of the fall term, the student may present his case in person to the dean upon his arrival at the University.

Degrees.—The degree of Bachelor of Arts (B.A.) with specification of the major subject, is conferred upon all students who complete a curriculum in the College of Arts and Sciences.

The degree of Bachelor of Science (B.S.) in the curriculum pursued is conferred upon students who complete the prescribed work of four years in the Colleges of Agriculture or Technology.

The degree of Bachelor of Arts in Education (B.A. in Ed.) or the degree of Bachelor of Science in Education (B.S. in Ed.) in the curriculm pursued is conferred upon students who complete the prescribed work in the School of Education.

A minimum residence of one year is required for the attainment of any Bache-

lor's degree. This regulation refers to the senior year. Exceptions may be made in the case of students who have received academic credit while in war service.

No student will be recommended for a degree who, having been reported to the Committee on Student's Use of English of his college, shall have failed to satisfy the requirements of the committee.

The degree of Master of Arts (M.A.), Master of Science (M.S.), or Master of Education (M.Ed.) is granted for one year's graduate work completed with distinction.

DEGREES WITH DISTINCTION are conferred at Commencement for the following attainments in rank:

Seniors in the Colleges of Agriculture and Technology having an average grade of 3.50 or above are graduated with highest distinction, 3.25 to 3.49 with high distinction, and 3.00 to 3.24 with distinction.

Seniors in the College of Arts and Sciences and the School of Education having an average grade of 3.75 or above are graduated with highest distinction, 3.50 to 3.74 with high distinction, and 3.25 to 3.49 with distinction.

The average grade is based on the work of the first three and one-half years, which must include three years of resident study at the University of Maine for students in the Colleges of Agriculture, Arts and Sciences, and Technology and two years in the School of Education for students who have transferred from other institutions. Candidates in the Colleges of Agriculture, Arts and Sciences, and Technology must have completed seven-eighths and in the School of Education three-fourths of the required hours at the end of the fall semester of the senior year. Candidates must take their senior year at the University of Maine.

DEGREES WITH HONORS, WITH HIGH HONORS, OR WITH HIGHEST HONORS are awarded to seniors in the College of Arts and Sciences who successfully complete the Honors program.

Grading System.—Grades at the University are given in terms of letters. For this purpose the letters A. B. C. D. E. F. Abs., and Def. are used.

The meaning of these symbols is: A, high honors; B, honors; C, passed; D, passed unsatisfactorily; E, not passed (arrearage examination allowed in College of Agriculture); F, failed; Abs., absent from examination; Def., deficient in some specific class activity. For purposes of comparison these letters carry the following arbitrary values: A=4, B=3, C=2, D=1, E=0, F= -1.

Each college and the School of Education sets its own graduation requirements in terms of grades or grade points.

Beginning with the class of 1949, however, all the colleges will use the grade point system in which a student must accumulate a total of grade points equal to the number of hours required for graduation exclusive of basic Military Science and Tactics. Grade points are computed by multiplying each hour of the letter grade by the following factors: A by 3, B by 2, C by 1, and D by 0.

GRADE REPORTS are sent to the parents of freshmen at the middle and end of each semester and to the parent of sophomores, juniors, and seniors and graduate students at the end of each semester. Grade reports for the Summer Session are sent to the parents of all students from the University who are attending the Session.

Parents are notified whenever a student is placed or continued on probation or continued on trial or when removed from probation or trial. (This procedure is omitted in the case of veteran students who are of legal age.)

Student Regulations.—It is assumed that all students entering the University are willing to subscribe to the following: *A student is expected to show, both within and without the University, respect for order, morality, and the rights of others, and such sense of personal honor as is demanded of good citizens.*

Non-veteran freshmen are not permitted to have or operate motor vehicles at the University of Maine. This regulation prohibits a non-veteran freshman from bringing or keeping an automobile on the campus or in Orono or vicinity. Students are expected to observe the spirit as well as the letter of the regulation, and the cooperation of parents is solicited in the operation of the rule. Exceptions may be made by the Dean of Men or the Dean of Women in cases of freshmen who commute daily from their homes.

Each student is expected to be present at every college exercise for which he is registered.

Detailed information about the regulations affecting students is contained in a pamphlet entitled "Information for the Guidance of Students" obtainable at the office of the Registrar.

STUDENT ACTIVITIES

Cooperative Government.—The organizations through which cooperative government is effected are the following.

THE MEN'S STUDENT SENATE is composed of representatives of the men's residences, off-campus groups, social fraternities, and others. The purpose of the Men's Senate is to reflect student opinion, to make recommendations to the University Administration, and to supervise certain campus activities of concern primarily to men students.

THE WOMEN'S STUDENT GOVERNMENT ASSOCIATION includes in its membership all women registered at the University of Maine. The purpose of the organization is to encourage among the women of the University an active sense of responsibility for self-government. The Council, composed of representatives of the several dormitories, and of the off-campus, sorority, and non-sorority women, acts as an executive committee and carries on the business of the organization.

THE GENERAL STUDENT SENATE is composed of representatives from various student organizations and resident groups, plus the four officers who are elected by popular vote of the students.

Religious Activities.—The Maine Christian Association, known by everyone as the "MCA," is the campus-wide religious organization. For all faiths and all students, its purpose is to promote religious fellowship, knowledge, and service, to make religion a more vital part of campus activities. Headquarters for the organization is the M.C.A. Building, which has rooms equipped for reading, recreation, and study, a kitchenette, a Little Chapel, and offices of the M.C.A. secretaries.

Student committees, under the guidance of secretaries for men and women, carry out a flexible and stimulating program. Within its scope is the Freshman Club, 300 Club for upperclassmen, discussions of student and social problems, religious deputations, Wednesday Morning Fellowship, and Sunday Services. At the MCA Building are centered the activities of the Newman Club for Catholic students and the Hillel Foundation for Jewish students. Protestant and Catholic services are held each Sunday in the Little Theatre in Alumni Hall. Hillel services are scheduled for Jewish students each Friday evening. Students are also welcomed at the churches of Orono, Old Town, and Bangor.

Honor Societies.—These groups recognize attainment and promise in the academic field by selecting for membership students from various divisions or departments as given in the following list. The date indicates when the chapter was established at the University.

PHI KAPPA PHI (1900).—All colleges and the School of Education.
ALPHA ZETA (1906).—Agriculture.
TAU BETA PI (1911).—Engineering.
XI SIGMA PI (1917).—Forestry.
PHI BETA KAPPA (1923).—College of Arts and Sciences.
NEAI MATHETAI (1925).—Freshman women.
OMICRON NU (1931).—Home Economics.
KAPPA DELTA PI (1932).—School of Education.

Professional and Departmental Organizations.—Many departments or divisions of the University sponsor an organization to bring together students having a common interest. Such clubs, with the subject in which each specializes, follow.

Professional societies:
STUDENT BRANCH OF THE AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS.
STUDENT AFFILIATES OF THE AMERICAN CHEMICAL SOCIETY.
STUDENT BRANCH OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS.
BRANCH OF THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.
BRANCH OF THE AMERICAN HOME ECONOMICS ASSOCIATION.
BRANCH OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
SCABBARD AND BLADE.—Military.

Departmental clubs:
AGRICULTURAL CLUB.
CERCLE FRANÇAIS.—French.
CIRCULO ESPAÑOL.—Spanish.
COLLEGE 4-H CLUB.
EDUCATION CLUB.
FORESTRY CLUB.
HOME ECONOMICS CLUB.
PRESS CLUB.—Journalism.
SIGMA DELTA ZETA.—Mathematics.

The following organizations elect to membership students who have achieved distinction in the field represented:

CONTRIBUTOR'S CLUB.—Creative writing.
MU ALPHA EPSILON.—Music.
SIGMA MU SIGMA.—Psychology.
DEUTSCHER VEREIN.—German.

Musical Organizations.—The following organizations, all under the supervision of the Department of Music, provide opportunity for those with interest and ability to engage in group work.

THE UNIVERSITY BAND is attached to the Military Department, rehearses weekly, and plays for various University functions, military ceremonials, and athletic events, and gives concerts. Credit is granted for band participation.

THE MEN'S GLEE CLUB AND THE GIRLS' GLEE CLUB participate both separately and in combination at assemblies, student concerts, radio broadcasts, and concerts of the Bangor Symphony Orchestra. This work carries academic credit when registered for as Mc 25, Chorus.

THE CHAPEL CHOIR, a Maine Christian Association organization, takes part in its weekly services and unites with the Glee Clubs in some of the larger events. This organization carries no academic credit.

THE UNIVERSITY ORCHESTRA devotes weekly rehearsals to the study of standard and symphonic music. Its repertoire is presented in concerts on and off the campus. It accompanies the Glee Clubs in many presentations. Credit is granted for orchestra participation.

The Maine Masque Theatre.—This organization provides an opportunity for students with interest and ability to appear in public theatre performances or to assist in their production. All undergraduates in good standing at the University are eligible to participate in the activities of the Theatre and to try out for the acting roles. Conditions for active and associate membership are established by the Masque which is under the general supervision of the Department of Speech in cooperation with the Faculty Theatre Committee.

The Maine Radio Guild.—This organization offers to all students an opportunity to take part in the University radio broadcasts in the role of announcer, actor, director, writer, or producer. It is under the general supervision of the Department of Speech in cooperation with the faculty Radio Committee.

Debating Society.—This society is open to all students interested in forensic work. From this group representatives are chosen to speak before luncheon clubs, grange meetings, and community gatherings, and to participate in intercollegiate debates; also members are selected to represent the University on a debating tour of eastern institutions.

The Debating Society sponsors the Women's Forum. This organization is open to all women students of the University and offers an opportunity to meet informally with members of the faculty and other guest speakers and discuss controversial subjects. The group meets informally for discussion twice a month.

Student Publications.—The following are published regularly by students.

THE MAINE CAMPUS, a newspaper published weekly during the academic year by an editorial board composed of students.

THE PRISM, an illustrated annual published by the junior class.

THE PINE NEEDLE, a magazine published monthly during the academic year by an editorial board composed of students.

Social Fraternities and Sororities.—The following fraternities and sororities have chapters at the University, the figures in parentheses giving the dates they were established.

FRATERNITIES.—National: Beta Theta Pi (1879), Kappa Sigma (1886), Alpha Tau Omega (1891), Phi Kappa Sigma (1898), Phi Gamma Delta (1899), Sigma Alpha Epsilon (1901), Sigma Chi (1902), Theta Chi (1907), Delta Tau Delta (1908), Lambda Chi Alpha (1913), Sigma Nu (1913), Phi Mu Delta (1923), Alpha Gamma Rho (1924), Tau Epsilon Phi (1929). Local: Phi Eta Kappa (1906).

SORORITIES.—National: Alpha Omicron Pi (1908), Phi Mu (1912), Delta Delta Delta (1915), Pi Beta Phi (1920), Chi Omega (1921), Delta Zeta (1924).

Admission

INFORMATION FOR VETERANS

Office of Veterans' Education.—The University maintains an Office of Veterans' Education at 108-109 East Annex for the assistance of former servicemen and women. Any requests for information concerning veterans' educational privileges under Public Law 16 or Public Law 346 may be forwarded to this office. Former students of the University as well as prospective students should submit their applications to the Director of Admissions.

Veterans' Administration.—A training officer of the Veterans' Administration, Mr. Lloyd F. Pike, is located in the Library. Contact representatives are also here from time to time to help with other problems not directly concerned with education and training. The contact representatives will answer questions about insurance, medical care and treatment, disability claims, etc.

ADMISSION TO THE FRESHMAN CLASS

Candidates for admission to the freshman class should *apply to the Director of Admissions* for an application card and other necessary blanks. These blanks should be returned promptly, together with the application fee of $15 (and room reservation deposit of $25 if a dormitory room is desired). It is necessary to file application *early* to facilitate admission and room assignment.

The University admits men and women, both residents of Maine and non-residents; it reserves the right to terminate admission whenever the capacity of the University to care properly for the students has been reached. Graduates of accredited high schools and academies may be admitted on the basis of their school records provided they have completed, with recommending grades, a course of study preparatory to the curriculum that they wish to follow in the University, and are fully recommended by their principal. Candidates who lack recommending grades may be required to take either a scholastic aptitude test or subject matter examinations, or both, as specified by the Director of Admissions.

The University is interested in candidates whose character, scholastic attainments, aptitudes, interests, industry, and habits of study give definite promise of success in college work. The candidate is required to submit a carefully answered questionnaire concerning favorite studies, school activities, community interests, hobbies, choice of college course, choice of a life work, and other matters bearing upon preparation for a college course. This information is required so that the University may better guide the students in selecting courses of study best suited to their individual abilities, aptitudes, and interests. The principal, teachers, and adult acquaintances of the applicant are asked to give confidential information regarding character, personality, school and community activities, and ability to pursue successfully a college course. So far as possible, a personal interview will be arranged with each candidate.

It is requested that all entering students submit a certificate from a physician stating that they have been vaccinated for smallpox within the past seven years. If the applicant has not been vaccinated within this period, it is recommended that he or she be vaccinated *early in the summer* in order to be well over any effects of the inoculation before the opening of college.

Entrance Examinations.—Principals or prospective candidates should file examination requests with the Director of Admissions.

The examinations given by the College Entrance Examination Board and the Regents of the State of New York are accepted by the University of Maine.

Requirements for Admission.—During the postwar period, unit requirements for admission to the University will be as follows:

For unconditioned admission, all colleges of the University will require fifteen units of high school work of which the following are prescribed:

English (4 years)	3 units
Algebra	1 unit
Geometry	1 unit
History	1 unit

For admission to the College of Technology, Agricultural Engineering, Bacteriology, Botany, Entomology, and Forestry, two units of Algebra are required. Students applying for the College of Arts and Sciences are urged to present credits in foreign language. Chemistry and two units of Algebra are strongly recommended for girls entering the Five-Year Nursing Curriculum. Those applying for the College of Technology are urged to study mathematics during the last year in secondary school and offer units in foreign language and in chemistry or physics. Candidates for the College of Agriculture are advised to offer a unit in chemistry.

Elective Subjects:

Agriculture	Dramatics	Physiography
Algebra	Drawing	Physiology
Art	Foreign Languages	Problems of Democracy
Bible	General Mathematics	Solid Geometry
Biology	General Science	Speech
Botany	History	Trigonometry
Chemistry	Home Economics	Zoology
Civics	Manual Training	
Commercial Subjects	Music	
Debating	Physics	

Laboratory and non-prepared subjects are rated at one-half credit.

ADMISSION OF SPECIAL AND SHORT COURSE STUDENTS

Special Students.—In exceptional cases persons may be classified as special students. Such students are not candidates for degrees but will be registered by the dean or deans concerned.

Two-Year Course in Agriculture.—Candidates for admission to the Two-Year Course in Agriculture must have satisfactorily completed two years of high-school work. Students who contemplate transfer to the regular four-year curriculum must satisfy entrance requirements for the College of Agriculture.

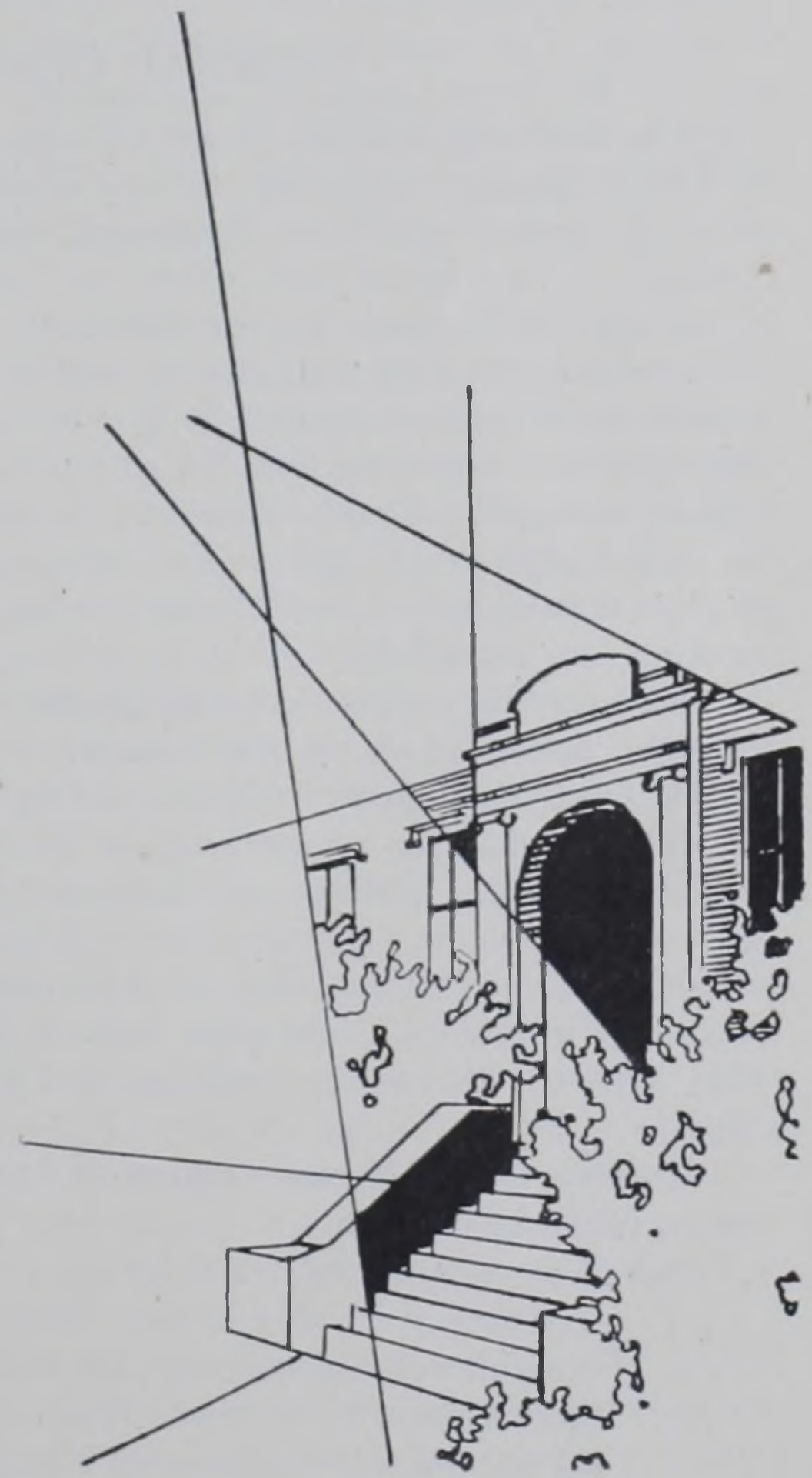
ADMISSION BY TRANSFER

A student desiring to transfer to the University of Maine from another college of recognized standing should file application with the Director of Admissions at an

early date. This request should include a statement of the names and addresses of all high schools, preparatory schools, normal schools, junior colleges, colleges, and universities attended as well as information indicating the desired curriculum.

The applicant will arrange for official transcripts and catalogs to be forwarded from all previously attended normal schools, junior colleges, colleges, and universities to the Director of Admissions, University of Maine, Orono, Maine.

COLLEGE OF AGRICULTURE



ARTHUR L. DEERING, DEAN

College of Agriculture

The College of Agriculture comprises the Departments of Agricultural Economics and Farm Management, Agricultural Education, Agronomy and Agricultural Engineering, Animal Industry, Bacteriology and Biochemistry, Botany and Entomology, Forestry, Home Economics, Horticulture, Poultry, Short Courses, and Extension Service. This college offers to young men and women an opportunity to secure a broad education and thorough training in the sciences and technics relating to the major course of study they may elect to pursue. It aims to prepare them for lives of usefulness as citizens of the State and for effective service in their chosen vocations or professions.

GENERAL INFORMATION

The four-year curricula in the College of Agriculture require the completion of 140 credit hours exclusive of Basic Military Training, with the exception of those of Forestry and Home Economics, which comprise 146 and 128 credit hours respectively. In addition each student must accumulate a total of grade points equal to the number of credit hours required for graduation in the curriculum chosen. These grade points are computed by multiplying each credit of the letter grade by a factor as follows: A by 3, B by 2, C by 1, and D by 0. Upon the completion of the required curriculum, with the necessary number of grade points, the student will be recommended for the degree of Bachelor of Science (B.S.).

All students registered in the College of Agriculture should obtain summer work in their respective major fields in order to prepare themselves better for future entrance into those fields.

Students who contemplate entering chemical work related to agriculture should elect the courses offered in Biochemistry covering the qualitative and quantitative chemical analysis of feeds, fertilizers, and dairy products.

Students desiring to specialize in the botanical or entomological aspects of Forestry may offer freshman and sophomore years in Forestry as the first two years' work and register in the curriculum in Botany and Entomology in the junior year.

All students in the College of Agriculture are required to take not less than two hours from each of the three separate fields—(a) Literature, Philosophy and Fine Arts, (b) Economics, Sociology and Psychology, and (c) History and Government.

Regular Curricula and Courses of Instruction.—The courses of instruction are organized as follows:

1. Four-Year Agricultural Curricula:
   Agricultural Economics and Farm Management, Agricultural Education, Agricultural Enigneering, Agronomy, Animal Husbandry, Bacteriology, Biochemistry, Botany and Entomology, Dairy Husbandry, Dairy Technology, General Agriculture, Horticulture, and Poultry Husbandry
2. Four-Year Forestry Curricula:
   Forestry, Wildlife Conservation
3. Four-Year Home Economics Curricula:
   Vocational Sequences
      1. Home Economics Education

2. Extension-Home Demonstration or 4-H Club Work
3. Foods and Nutrition
4. Textiles and Clothing
5. Child Development and Training
6. General Home Economics and Special Sequences

4. The Two-Year Course in Agriculture
5. Short Courses in Agriculture
6. Farm and Home Week

THE FOUR-YEAR AGRICULTURAL CURRICULA

Certain studies are fundamental to all work in the agricultural field and for this reason as many of these subjects as possible are offered in the first year, during which the student has no choice in their selection. Beginning with the sophomore year, each student should choose one of the following major curricula: Agricultural Economics and Farm Management, Agricultural Education, Agronomy, Animal Husbandry, Biochemistry, Dairy Husbandry, Dairy Technology, General Agriculture, Horticulture, or Poultry Husbandry. In Agricultural Engineering, Bacteriology, Biochemistry, and Botany and Entomology, specialization begins with the freshman year.

These curricula are designed for those who wish to engage in the business of farming, for those contemplating the special fields open in each of the major lines of study, and for those desiring to enter a field of public service for which training in agriculture is requisite. In addition to those mentioned above there are many other opportunities open to the college trained man in the agricultural and associated industries. In all cases the student has the privilege of seeking guidance and advice from the administration executives of the College of Agriculture, from the heads of departments, and from any member of the teaching force.

Training for the Business of Farming.—The student contemplating the operation of a farm after graduation may be interested in obtaining specialized training in one particular phase of agricultural production, or he may desire a generalized training. To meet his specific needs he has the choice of several major fields of study, and by the proper selection of elective subjects he may broaden his agricultural training as much as he wishes.

Special Vocations.—The curricula of the agricultural division of the College of Agriculture offer courses of study to those individuals desiring to equip themselves for some particularly specialized agricultural or scientific vocation. Here a common freshman-year course of study (except for those interested in Bacteriology, Biochemistry, or Botany and Entomology) is found. Certain basic sciences are required along with fundamental agricultural subjects in order that a proper foundation may be laid upon which specialized plans of study can be developed to suit individual needs.

Preparation for Public Service.—Federal, state, and local public service agencies offer numerous opportunities for employment for men trained in agriculture. These agencies include Federal and state experiment stations, state colleges of agriculture, secondary schools, agricultural extension services, and Federal and state administrative bureaus in the fields of regulation, agricultural credit, agricultural adjustment, farm security, and soil conservation.

Specialized training for these fields of public service may be secured by the proper selection of a major agricutural curriculum and the use of electives in sup-

plementing technical training in agriculture with courses in public speaking, economics, sociology, finance, business law, and history and government.

Pre-Theological Preparation for the Rural Ministry and Agricultural Missions.—Many leaders in the work of the rural ministry and agricultural missions are suggesting that some of the men who plan to enter these fields of service should consider a pre-theological training in a college of agriculture.

A student planning to enter a theological seminary and enrolling in the College of Agriculture should major in the curriculum in General Agriculture. The wide choice of subjects in this curriculum enables the student to meet the pre-theological standards established by most theological schools including the Bangor Theological Seminary. A student selecting this major is advised to acquaint himself with the specific requirements of the theological seminary of his choice.

Agricultural and Associated Industries.—Within the industry of agriculture are found many special industries devoted to the processing and marketing of agricultural products in addition to the several branches of raw material production. In turn these industries are constantly calling upon associated industries for equipment, supplies, and services. Thus the student especially inclined toward some one of the many fields of technical endeavor to be found in these industrial branches may equip himself for it by a proper selection of curriculum.

SPECIAL STUDENTS IN AGRICULTURE

Persons not candidates for a degree who desire to take special studies may be permitted to do so, if, upon examination, they give evidence of satisfactory preparation. This privilege is intended only for students of unusual maturity (at least twenty-one years of age) or previous advancement in particular subjects, and not for those who are incompetent to pursue a regular course. If they subsequently desire to become candidates for a degree, they will be required to meet all the entrance requirements.

The annual expenses for courses of one year or more are the same as those for students in the four-year curricula.

SHORT COURSES IN THE COLLEGE OF AGRICULTURE

Short Courses of twelve weeks duration are offered to young men and adults who are engaged in or are about to engage in agricultural pursuits and who desire to devote some time to the securing of definite instruction in the field of their special interests.

Courses are available each term of the regular academic year in Dairy Farming, Dairy Manufactures, Farm Mechanics, Fruit and Vegetable Farming, Ornamental Horticulture, Potato Farming, and Poultry Farming. A registration of five is the minimum number for which a course may be given.

Applicants for admission must be at least sixteen years of age and have had a good common school education. Information concerning Short Courses may be secured by addressing the Director of Short Courses, College of Agriculture.

FARM AND HOME WEEK

There is a large number of people who cannot come to the college for a great length of time but who desire a few days of practical instruction. To reach and accommodate these, "Farm and Home Week" is held. Lectures on practical agri-

cultural subjects are given morning, afternoon, and evening. Practical demonstrations occupy a part of each afternoon. Besides the practical subjects discussed, one or more sessions are given up to problems of rural betterment. Considerable emphasis is placed on agricultural marketing problems peculiar to Maine. The homemaking program includes the various phases of home management and is of interest to both rural and urban homemakers. Dates and programs may be secured each year by addressing the College of Agriculture.

THE EXTENSION SERVICE

The Extension Service is organized as a department of the College of Agriculture. It operates under the provisions of the Smith-Lever, Capper-Ketcham and Bankhead-Jones Acts, receiving its funds from State and Federal sources.

Its personnel is made up of two groups of agents. One group, the County Extension Agents, consists of agricultural agents, home demonstration agents, and club agents, having their headquarters within the counties which they serve. The other group, the State Agent force, consists of a limited number of specialists and leaders having their headquarters at the University but working with and assisting the County Extension Agents.

The Extension Service, through these men and women, gives direct assistance to people living on the farms and in the rural and urban homes of this state. The Farm Bureau, an organization having a membership of more than 18,000 men and women, cooperates with the Extension Service in the determination and development of its county and community programs of work.

IDENTIFICATION, TESTING, DIAGNOSTIC, AND CORRESPONDENCE SERVICE

The College of Agriculture provides a service for the identification of plant specimens, the diagnosis of plant and animal diseases, and the testing of soils and materials. In addition the College welcomes inquiries on practical agricultural, forestry, and home economics subjects. Extension bulletins dealing with different phases of these subjects are published at frequent intervals throughout the year and will be sent without cost to persons applying for them. A list of bulletins and circulars available for distribution will be forwarded on request.

FRESHMAN CURRICULUM IN AGRICULTURE

The curriculum for the Freshman Year for all students following Four-Year Curricula in Agriculture.

FALL SEMESTER

Subject			Hours Rec.	Lab.	Cr.
Ag	11	Agronomy	3	0	3
Agr	1	Orientation	1	0	½
An	3	Animal Husbandry	3	0	3
Ch	1	Gen. Chemistry	3	3	4
Eh	1	Freshman Comp.	3	0	3
Mt	1	Military Training	2	1	1½
Pe	1	Phy. Education	0	2	0
Zo	1	Zoology	2	4	4
					19

SPRING SEMESTER

Subject			Hours Rec.	Lab.	Cr.
Agr	2	Orientation	1	0	½
Bt	2	Botany	2	4	4
Ch	2	Gen. Chemistry	3	3	4
Eh	2	Freshman Comp.	3	0	3
Ht	2	Horticulture	3	0	3
Mt	2	Military Training	2	1	1½
Ph	2	Poultry Husbandry	3	0	3
Pe	2	Phy. Education	0	2	0
					19

For Freshmen In Agriculture

Agr. 1. 2. Orientation.—History, organization, and functioning of the University; agriculture of Maine; and choice of vocational and professional pursuits in the agricultural field. *One hour a week. One-half credit hour.* MR. LORING

DEPARTMENTS OF INSTRUCTION

Courses numbered 1-50 are for undergraduates only; courses numbered 51-100 are primarily for upperclassmen and graduates; courses numbered above 100 are primarily for graduates.

When a course is regularly offered in more than one semester, it is designated by two numbers, the second of which is in parenthesis [e.g., 1 (2)].

When a dash is used between the two numbers (e.g., 1-2), both semesters must be taken to obtain credit; when a semicolon is used (e.g., 1; 2), the first semester may be taken by itself, but the second cannot be taken unless the first is taken previously; when a period is used (e.g., 1.2), either semester may be taken for credit.

Courses offered in alternate years are indicated by the sign (‡) placed after the title of the course.

AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

Professors Merchant, Jones; Associate Professor Luke; Mr. Pullen and Mr. Lebrun

CURRICULUM IN AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3	*Ag	14	Sw. Corn, Peas, Beans, or Forage Crops	2	2	3
An	21	Livestock Feeding	3	2	4						
Bt	45	Genetics	3	0	3						
Dh	1	Gen. Dairying	2	2	3	*Ag	16				
Es	1	Prin. of Economics	3	0	3	Bc	8	Agri. Chemistry	2	0	2
Mt	3	Military Training	2	1	2	Fm	48	Agri. Economics	3	0	3
Pe	3	Phy. Education	0	2	0	Mt	4	Military Training	2	1	2
						Pe	4	Phy. Education	0	2	0
								Elective			8
					18						18

Junior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
*Ag	15	Potato Prod.	2	2	3	Fm	54	Agri. Accounting	2	2	3
By	3	Bacteriology	2	0	2	Fm	72	Adv. Agr. Economics	3	0	3
Eh	5	Tech. Composition	2	0	2	Fm	76	Agri. Marketing	3	0	3
Fm	75	Agri. Statistics	1	4	3			Elective			9
		Elective			9						
					19						18

* Only one course required (Ag 14, 15, or 16).

Senior Year

FALL SEMESTER

	Subject	Hours Rec.	Lab.	Cr.
Fm 77	Agr. Finance	3	0	3
Fm 79	Coop. in Agr.	3	0	3
Fm 87	Agri. Prices	3	0	3
Fm 93	Seminar	1	0	1
	Marketing Elective			2
	Other elective			6
				18

SPRING SEMESTER

	Subject	Hours Rec.	Lab.	Cr.
Fm 74	Farm Management	3	3	4
Fm 94	Seminar	1	0	1
	†Marketing Elective			2
	Other elective			11
				18

† Not required if taken in fall.

48. Agricultural Economics.—An introductory course in the principles of economics as applied to agriculture. Consideration is given to the development of commercial agriculture, price-making forces, production factors, land policies, foreign trade, taxation, credit, marketing, and farm management. *Three credit hours.* MR. JONES

54. Agricultural Accounting.—Principles of keeping farm records and accounting methods for different kinds of farm businesses. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. PULLEN

65. Forest Accounting.—Accounting methods for the different types of logging and lumbering operations. Problems in cost and income factors, and profit and loss statements of various kinds of forest operations. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. PULLEN

72. Advanced Agricultural Economics.—Advanced consideration of the principles and theory of economics as applied to the field of agriculture. Prerequisite, Course 48. *Three credit hours.* MR. LEBRUN

74. Farm Management.—Farming as a business; size of business; balance; production rates; labor efficiency; crop rotations; machinery; farm layout; building arrangement; choosing a farm; and study of farm organization and management of specific farms. Classroom, *three hours a week;* laboratory, *three hours a week. Four credit hours.* MR. JONES

75. Agricultural Statistics.—Practical problems in statistical measurements such as averages, trends, seasonal variation, cycles, index numbers, linear and nonlinear correlations, and errors. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. MERCHANT

76. Agricultural Marketing.—The economic principles of marketing agricultural products, with special reference to products of importance in the northeastern United States. *Three credit hours.* MR. PULLEN

77. Agricultural Finance.—Credit needs and sources of credit for farmers with special reference to Maine. *Three credit hours.* MR. PULLEN

78. Marketing Potatoes.—Trends in production, regional competition, grades, containers, storage, transportation, sale methods, and price relationships. *Three credit hours.* MR. MERCHANT

79. Cooperation in Agriculture.—Appreciation and understanding of the cooperative method of business organization with factors affecting success and failure. Attention given to special problems of organization, taxation, financing, and service. *Three credit hours.* MR. PULLEN

83. 84. Thesis.—A thesis on a subject in agricultural economics, farm management, agricultural marketing, agricultural finance, land utilization, farm taxation, agricultural prices, or rural sociology. Prerequisite, permission to register. *Credit, arranged.* MEMBERS OF THE DEPARTMENTAL STAFF

86. Agricultural Marketing (Apples and Small Fruits).—The economic factors involved in marketing apples and small fruits with special emphasis on New England. *Two credit hours.* MR. LEBRUN

87. Agricultural Prices.—The underlying factors causing price changes in agricultural commodities, effects of inflation and deflation, interrelationship of supply and prices, long-time trends, seasonal variation, cyclical movements, and government price policies. *Three credit hours.* MR. JONES

88. Marketing Dairy Products.—Consideration of factors affecting supply of, and demand for dairy products. Emphasis is given to the problems of fluid milk marketing in New England, including season of production, distribution, consumer demand, prices and governmental regulation. *Three credit hours.* MR. LUKE

89. Marketing Poultry Products.—Problems involved in the marketing of eggs and poultry, including production, assembly, transportation, storage, packaging, wholesale and retail distribution, grades, prices and costs. *Three credit hours.* MR. LUKE

91. Land Utilization.—Physical factors and economic conditions determining the utilization of farm land, production areas for important farm commodities, shifts taking place in these areas, trends in population and consumption, land classification, land values, and land policy. *Three credit hours.* MR. LEBRUN

92. Rural Tax Problems.—National, state, and local problems connected with rural taxation. The effect of increased tax burdens on farmers. Growth of public expenditures; sources of public revenues; the general property tax and its administration. The effect of income, inheritance, and gasoline taxes on farmers. *Two credit hours.* MR. PULLEN

93. 94. Seminar.—Discussion of current economic problems. *One credit hour.* MR. MERCHANT

102. Advanced Agricultural Statistics.—Analysis of variance, measures of significant differences, partial correlation, and multiple correlation, using linear and curvilinear relationships. Open to seniors and graduate students by permission. *Credit, arranged.* MR. MERCHANT

103. Advanced Farm Management.—Special emphasis is given to the organization and management of farms under various economic conditions, farm prices, and labor efficiency. Open to graduate students. *Credit, arranged.* MR. JONES

104. Advanced Agricultural Marketing.—Advanced work in the marketing of potatoes, apples, poultry, eggs, and dairy products. Open to graduate students. *Credit, arranged.* MR. MERCHANT

125. Graduate Thesis.—*Credit, arranged.* MR. MERCHANT

Rural Sociology

24. Rural Sociology.—Study of the social aspects of agriculture and rural life in a changing world. An understanding of rural life—its people, neighborhoods, community, interest groups, institutions, and social processes. This course is the same as Sociology 24. *Three credit hours.* MR. LEBRUN

Courses For Two-Year Agriculture

2TY. Farm Economics.—An elementary course in the principles of economics as applied to the field of agriculture. Attention will be given to the economic development of several types of commercial agriculture, land policies, domestic and foreign trade, taxation, and price policies. *Two credit hours.*

MR. LEBRUN

3TY. Farm Management.—Factors that affect the profitable operation of the farm business. Size of business, balance, rates of production, labor and machinery efficiency, crop rotations, farm layout, building arrangement, farm accounting, and the organization and management of specific farms will be considered in the course. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.*

MR. JONES

4TY. Marketing Farm Products.—Economic principles involved in marketing agricultural products with special attention to those produced in New England. Time will be devoted to cooperative marketing. *Three credit hours.*

MR. PULLEN

AGRICULTURAL EDUCATION

PROFESSOR ELLIOTT

Minors in Agricultural Education must take all of the courses required of major students with the exception of Ag 43. Any Agricultural Marketing Course may be substituted for Fm 76 or Fm 78. Also Bc 8, Agri. Chemistry is not required of minors if they have had Bc 1, Organic Chemistry and Bc 2, Biochemistry.

Directed Teaching will be off the campus in the latter part of the Fall Semester. Extra expense to the student due to this off-campus requirement will be refunded. Final examinations in agricultural subjects, covering only the work given to date, will be given during the week preceding the Christmas recess to all who are to be away from the campus for Directed Teaching.

CURRICULUM IN AGRICULTURAL EDUCATION

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3	Ae	2	Agri. Education	2	0	2
An	21	Livestock Feeding	3	2	4	Ag	8	Soil Management	3	0	3
En	21	App. Entomology	3	2	4	Bc	8	Agri. Chemistry	2	0	2
Mt	3	Military Training	2	1	2	Fm	48	Agri. Economics	3	0	3
Pe	3	Phy. Education	0	2	0	Mt	4	Military Training	2	1	2
		Elective			6	Pe	4	Phy. Education	0	2	0
								Elective			6
					19						18

Junior Year

FALL SEMESTER					
		Subject	Hours Rec.	Lab.	Cr.
Ag	41	School Shop	0	4	2
By	3	Bacteriology	2	0	2
Dh	1	General Dairying	2	2	3
Eh	5	Tech. Composition	2	0	2
		Elective			9
					18

SPRING SEMESTER					
		Subject	Hours Rec.	Lab.	Cr.
Ae	4	Special Methods in Teaching Agri.	3	0	3
Ag	30	Farm Machinery or	2	2	3
Ag	36	Farm Power			
Ag	42	School Shop	0	4	2
Fm	24	Rural Sociology	3	0	3
Fm	76	Agri. Marketing or	3	0	3
Fm	78	Marketing Potatoes			
		Elective			4
					18

Senior Year

			Rec.	Lab.	Cr.
Ae	9	Directed Teaching	0	6	6
Ag	43	School Shop	0	6	3
		Elective			9
					18

			Rec.	Lab.	Cr.
Ae	6	Supervised Farm Practice	2	0	2
Ae	8	Teaching Farm Mechanics	2	0	2
Fm	74	Farm Management	3	3	4
		Elective			10
					18

2. Agricultural Education.—A general course including a presentation of all the various phases of the program; administration; relationship to other agencies; State and Federal legislation; history; aims; effectiveness; importance; opportunities. Prerequisite to Courses 4, 6 and 8. *Two credit hours.* MR. ELLIOTT

4. Special Methods in Teaching Agriculture.—Programs of work; rooms and equipment; curriculum; teaching plans; conducting class; teaching methods; lesson plans; part-time and evening schools; Future Farmers of America. *Three credit hours.* MR. ELLIOTT

6. Supervised Farm Practice.—Requirements for supervised farm practice; its importance; selection of projects; project plans; project records; project supervision; long-time programs; project budgeting; financing the project; credit for supervised farm practice. *Two credit hours.* MR. ELLIOTT

8. Methods of Teaching Farm Shop.—Importance; meaning; aims; purposes; type of shop; tools and equipment; organization of shop; shop instruction; shop texts and references; course content. *Two credit hours* MR. ELLIOTT

9. Directed Teaching.—A course for the prospective teacher of vocational agriculture. Introduction to teaching including observation and participation in classroom and shop instruction, administration; extracurricular activities; supervised farm practice and community service. *Six credit hours.* MR. ELLIOTT

AGRONOMY AND AGRICULTURAL ENGINEERING

PROFESSORS LIBBY, TERMAN; ASSISTANT PROFESSORS MORAN, RICH, STRUCHTEMEYER, SWIFT, TREVETT; MR. ALLAN, MR. EASTMAN

CURRICULUM IN AGRONOMY

Sophomore Year

FALL SEMESTER					
Subject			Hours		
			Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3
*Ag	15	Potato Production	2	2	3
An	21	Livestock Feeding	3	2	4
Bc	1	Organic Chemistry	2	2	3
En	21	App. Entomology	3	2	4
Mt	3	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0
		Elective			0 or 3
					19

SPRING SEMESTER					
Subject			Hours		
			Rec.	Lab.	Cr.
*Ag	14	Sw. Corn, Peas, and Beans	2	2	3
Ag	16	Forage Crops	2	2	3
Bc	2	Biochemistry	3	2	4
Fm	48	Agri. Economics	3	0	3
Mt	4	Military Training	2	1	2
Pe	4	Phy. Education	0	2	0
		Elective			3 or 6
					18

* Only one course required (Ag 14 or Ag 15).

Junior Year

			Rec.	Lab.	Cr.
Bt	53	Plant Physiology	2	4	4
By	1	Bacteriology	0	6	3
By	3	Bacteriology	2	0	2
Eh	5	Tech. Composition	2	0	2
		Elective			7
					18

			Rec.	Lab.	Cr.
Ag	8	Soil Management	3	0	3
Bt	56	Plant Pathology	2	4	4
Fm	76	Agri. Marketing	3	0	3
		Elective			8
					18

Senior Year

			Rec.	Lab.	Cr.
Ag	81	Seminar	1	0	1
Bt	45	Genetics	3	0	3
		Elective			14
					18

			Rec.	Lab.	Cr.
Ag	30	Farm Machinery or	2	2	3
Ag	36	Farm Power			
Ag	82	Seminar	1	0	1
Fm	74	Farm Management	3	3	4
		Elective			10
					18

CURRICULUM IN AGRICULTURAL ENGINEERING

This curriculum enables the student to secure the degree of B.S. in Agricultural Engineering in four years. If he wishes to secure a B.S. degree in the College of Technology in Civil, Electrical, or Mechanical Engineering, he may do so, with one additional year of work in that college. The proper courses to be taken during the junior and senior years vary with the Technology option chosen.

Freshman Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ag	11	Agronomy	3	0	3	Agr	2	Orientation	1	0	½
Agr	1	Orientation	1	0	½	Eh	2	Freshman Comp.	3	0	3
Eh	1	Freshman Comp.	3	0	3	Ht	2	Gen. Horticulture	3	0	3
Md	1	Funds. of Drafting	0	4	2	Md	2	Elem. Mach. Draft.	0	4	2
Ms	1	Trigonometry	2	0	2	Ms	4	Anal. Geom.	4	0	4
Ms	3	College Algebra	2	0	2	Mt	2	Military Training	2	1	1½
Mt	1	Military Training	2	1	1½	Pe	2	Phy. Education	0	2	0
Pe	1	Phy. Education	0	2	0	Ps	2	General Physics	4	2	5
Ps	1	General Physics	4	2	5						
					19						19

Sophomore Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
An	3	Animal Husbandry	3	0	3	Ag	42	School Shop	0	4	2
Ag	41	School Shop	0	4	2	Ch	2	Gen. Chemistry	3	3	4
Ch	1	Gen. Chemistry	3	3	4	Fm	48	Agri. Economics	3	0	3
Md	3	Des. Geometry	0	4	2	Ms	8	Int. Calculus	5	0	5
Ms	7	Diff. Calculus	5	0	5	Mt	4	Military Training	2	1	2
Mt	3	Military Training	2	1	2	Pe	4	Phy. Education	0	2	0
Pe	3	Phy. Education	0	2	0	Ph	2	Poultry Husb.	3	0	3
Ps	21	Mech. & Heat Lab.	0	4	2						
					20						19

Junior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3	Ag	30	Farm Machinery	2	2	3
Ag	33	Farm Structures	2	3	3	Ag	36	Farm Power	2	2	3
Ee	41	Elec. Circuits	2	0	2	Ee	46	Elec. Mach.	2	0	2
En	21	App. Entomology	3	2	4	Ee	48	Elec. Lab.	0	3	1½
Me	53	Mechanics	3	0	3	Me	44	Heat Eng.	0	3	1½
		Elective			3	Me	54	Mechanics	3	0	3
								Elective			4
					18						18

Senior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ag	35	Soil Water Control	2	3	3	Ag	8	Soil Management	3	0	3
Ag	81	Seminar	1	0	1	Ag	82	Seminar	1	0	1
By	3	Bacteriology	2	0	2	Eh	6	Tech. Composition	2	0	2
Dh	1	Gen. Dairying	2	3	3	Me	42	Mech. Lab.	3	0	3
		Elective			8			Elective			8
					17						17

Soils

1. Soils.—Origin, types, physical and chemical properties of soils as related to crop production. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. STRUCHTEMEYER, MR. EASTMAN

3. Forest Soils.—Origin, types, physical and chemical properties of soils as related to forests. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. STRUCHTEMEYER

8. Soil Management.—Improvement and maintenance of soil fertility through use of various fertilizers, cropping and soil conservation practices. Prerequisite, Course 1 or 3. *Three credit hours.* MR. STRUCHTEMEYER

54. Soil Analysis.—Principles, methods and practical value of various field and laboratory methods of soil analysis. Prerequisites, Courses 1 and 8. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. STRUCHTEMEYER

57. Soil Development and Classification.—Genesis, morphology and classification of soils, methods of mapping soils, and uses of soil surveys and maps. Prerequisite, Course 1 or 3. An introductory course in geology is also desirable. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. TERMAN

Crops

11. Agronomy.—Survey of the field of Agronomy with special emphasis on important field crops as to their culture, use, and adaptation. *Three credit hours.* MR. TREVETT

13. Weeds.—Characteristics of weeds, their sources, method of reproduction, dissemination, migration, and methods of control. Prerequisites, Course 11 and Botany 2. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. TREVETT

14. Sweet Corn, Peas, and Beans.—The production of sweet corn, peas, and beans for processing. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. TREVETT

15. Potato Production.—Varieties, seed selection, preparation of land, planting, fertilization, spraying, harvesting and storing. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. LIBBY

16. Forage Crops.—Grasses, legumes, and root crops, their management and uses as feed for livestock. Prerequisite, Course 11. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. MORAN

62. Seed Potato Production.—Selection of foundation seed stock, tuber unit planting, potato diseases, roguing, certification and development, and testing of new varieties. Prerequisite, Course 15. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. LIBBY

Agricultural Engineering

30. Farm Machinery.—Construction, operation, care, and adjustment of farm machinery. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. RICH

33. Farm Structures.—Planning, designing, and the construction of farm buildings; water systems; heating systems; sewage disposal; and the use of concrete on the farm. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. RICH, MR. ALLAN

35. Soil Water Control.—Theory and field work in taping, leveling, plane table, compass and transit work. Study and field layout of terraces and other

soil saving structures. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. RICH

36. Farm Power.—Application of power to farm operations. The construction, operation, care and adjustment of gas and electric motors and related equipment. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. RICH

41. School Shop.—Wood-tool fitting, furniture repair, painting, drawing, blue print reading, concrete work, plumbing and surveying. Laboratory, *four hours a week. Two credit hours.* MR. SWIFT, MR. RICH, MR. ALLAN

42. School Shop.—Forge and cold metal work, soldering, electricity, farm machinery repair, power transmission and harness repair. Laboratory, *four hours a week. Two credit hours.* MR. SWIFT, MR. RICH, MR. ALLAN

47. (48). Household Equipment.—Operation, care, adjustment, and selection of electrical and other types of household equipment. Elementary principles of heat, electricity, and home lighting. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. SWIFT

General Courses

60. Experimental Design.—Conduct of agronomic and related experiments, sources of error, and statistical methods of interpretation of biological data. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. TERMAN

81. 82. Seminar.—Recent literature, problems and experiments pertaining to soils, crops, and agricultural engineering. *One credit hour.*
MEMBERS OF THE DEPARTMENTAL STAFF

83. 84. Special Problems in Agronomy and Agricultural Engineering. *Credit arranged.* MEMBERS OF THE DEPARTMENTAL STAFF

125. Graduate Thesis.—*Credit, arranged.* MEMBERS OF DEPARTMENTAL STAFF

Courses For Two-Year Agriculture

1TY. Field Crops.—The principal field crops of the United States with special reference to crops important in New England. Their general culture, use, and adaptation. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. EASTMAN

2TY. Soils and Fertilizers.—Origin, general soil properties, and their relation to crop production. Study of various fertilizers and fertilizer practices. Classroom, *three hours a week;* laboratory, *three hours a week. Four credit hours.* MR. STRUCHTEMEYER

3TY. Potato Production.—Varieties, seed selection, preparation of land, planting, fertilization, spraying, harvesting and storing. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. LIBBY

7TY. Agricultural Arithmetic.—Basic arithmetic, averages, index numbers and graphs as applied to agriculture. Computation of feed and fertilizer formulas. *Two credit hours.* MR. SWIFT

8TY. Farm Machinery.—A study of the construction, operation, care and adjustment of common farm machinery. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. SWIFT

9TY. Farm Engineering and Mechanics.—Simple farm surveying as related to: running lines, tile drainage, septic tanks, contour farming; and a study

of farm structures. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. SWIFT

10TY. Farm Power.—A study of the construction and operation of common power sources used on the farm. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. SWIFT

ANIMAL INDUSTRY

PROFESSORS DICKEY, DORSEY, AND WITTER; ASSISTANT PROFESSOR HALL; MR. RAMSDELL, MR. EVANS, MR. CROCKETT

CURRICULUM IN ANIMAL HUSBANDRY

Sophomore Year

FALL SEMESTER

Subject			Hours Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3
An	21	Livestock Feeding	3	2	4
Bc	1	Organic Chemistry	2	2	3
Dh	1	Gen. Dairying	2	2	3
En	21	App. Entomology	3	2	4
Mt	3	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0
					19

SPRING SEMESTER

Subject			Hours Rec.	Lab.	Cr.
Ag	16	Forage Crops	2	2	3
An	22	Dairy Cattle	2	2	3
Bc	2	Biochemistry	3	2	4
Fm	48	Agri. Economics	3	0	3
Mt	4	Military Training	2	1	2
Pe	4	Phy. Education	0	2	0
		Elective			3
					18

Junior Year

			Rec.	Lab.	Cr.
An	35	Anatomy of Domestic Animals	2	2	3
Bt	45	Genetics	3	0	3
By	1	Bacteriology	0	6	3
By	3	Bacteriology	2	0	2
Eh	5	Tech. Composition	2	0	2
		Elective			5
					18

			Rec.	Lab.	Cr.
Ag	8	Soil Management	3	0	3
Ag	36	Farm Power	2	2	3
An	36	Physiology of Domestic Animals	3	0	3
By	52	Path. Bacteriology and Serol. Meth.	2	4	4
		Elective			5
					18

Senior Year

			Rec.	Lab.	Cr.
An	37	Animal Hygiene	3	0	3
An	55	Animal Nutrition	3	0	3
An	63	Seminar	1	0	1
An	65	Meat & Meat Prod.	2	2	3
		Elective			8
					18

			Rec.	Lab.	Cr.
An	60	Animal Breeding	2	3	3
An	64	Seminar	1	0	1
Fm	74	Farm Management	3	3	4
		Elective			10
					18

Animal Husbandry

3. General Animal Husbandry.—An introduction to Animal Husbandry. The species and breeds of livestock, the economic importance, breeding, feeding and management in this region. *Three credit hours.* MR. DICKEY

21. Livestock Feeding.—The principles of livestock feeding; livestock feeds and their values for the different classes of stock. The laboratory work consists of the study of feeds; the use of feeding standards; and the computation of rations. Prerequisite, Course 3. Classroom, *three hours a week;* laboratory, *two hours a week. Four credit hours.* MR. DICKEY, MR. EVANS

22. Dairy Cattle.—Selection, breeding, care and management of a dairy herd. The laboratory will be devoted to practical problems and dairy cattle judging. Prerequisites, Courses 3 and 21. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. DICKEY

24. Livestock Production.—The selection, breeding, feeding, care and management of beef cattle, sheep, swine and horses. Prerequisites, Courses 3 and 21. Classroom, *three hours a week;* laboratory, *two hours a week. Four credit hours.* MR. HALL

32. Advanced Dairy Cattle Judging.—The appraisal handling and judging of dairy cattle. Laboratory, *four hours a week. Two credit hours.* MR. DICKEY

35. Anatomy of Domestic Animals.—Comparative anatomy of the domestic animals and birds. Emphasis is placed on the important histological features, and those parts of the body involved in the common diseases. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. WITTER

36. Physiology of Domestic Animals.—Special emphasis is placed on comparative features, especially of the circulatory, respiratory, digestive, and urogenital systems of domestic animals and birds. *Three credit hours.* MR. WITTER

55. Animal Nutrition.—Principles of nutrition, methods of experimentation, and the application of nutritional theories to practical feeding problems. Prerequisite, Course 21. *Three credit hours.* MR. DICKEY

57. 58. Problems in Animal Husbandry and Animal Pathology.—Open to qualified senior and graduate students. *Credit, arranged.*

MR. DICKEY, MR. WITTER, MR. HALL

60. Animal Breeding.—The physiology of reproduction; the principles and theories of breeding as applied in the livestock industry; and the study of pedigrees and records in the herd books. Prerequisite, Course 35. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. HALL

63. 64. Seminar.—Preparation and presentation of papers dealing with topics in the field of Animal Husbandry. *One credit hour.*

MR. DICKEY, MR. WITTER, MR. HALL

65. Meat and Meat Products.—The handling and preparation of livestock for market. Farm and packing house methods of slaughter of animals, and cutting and curing of meats. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. WITTER

125. Graduate Thesis.—*Credit, arranged.* MR. DICKEY

Animal Pathology

37. Animal Hygiene.—Principles of hygiene, sanitation, and immunology applied to the prevention and control of common diseases of domestic animals. Special attention is given to the fundamentals of disease processes. *Three credit hours.* MR. WITTER

40. Poultry Diseases.—Principles of hygiene and sanitation applied to the prevention and control of the diseases of poultry, including a detailed considera-

tion of the pathological processes involved in the common diseases. *Three credit hours.* MR. WITTER

44. Disease and Parasite Control (in Wildlife).—Known infections and parasitic diseases of game and fur-bearing animals, emphasizing preventive and control measures. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. WITTER

Courses For Two-Year Agriculture

1TY. Animal Husbandry.—Market types, classes, and breeds of livestock, their economic importance in this region, and their care and management. Classroom, *three hours a week;* laboratory, *two hours a week. Four credit hours.* MR. HALL

5TY. Livestock Feeding.—General principles underlying feeding of livestock; composition and characteristics of feed stuffs; calculating rations; and the best practices in feeding farm animals. Classroom, *three hours a week;* laboratory, *two hours a week. Four credit hours.* MR. HALL

7TY. Animal Diseases.—Anatomy, physiology, hygiene and sanitation. The prevention and control of the common diseases of domestic animals. *Three credit hours.* MR. WITTER

CURRICULUM IN DAIRY HUSBANDRY

Sophomore Year

FALL SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3
An	21	Livestock Feeding	3	2	4
Bc	1	Organic Chemistry	2	2	3
Dh	1	General Dairying	2	2	3
En	21	App. Entomology	3	2	4
Mt	3	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0
					19

SPRING SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Ag	16	Forage Crops	2	2	3
An	22	Dairy Cattle	2	2	3
Bc	2	Biochemistry	3	2	4
Fm	48	Agri. Economics	3	0	3
Mt	4	Military Training	2	1	2
Pe	4	Phy. Education	0	2	0
		Elective			3
					18

Junior Year

			Rec.	Lab.	Cr.
An	35	Anatomy of Domestic Animals	2	2	3
By	45	Genetics	3	0	3
By	1	Bacteriology	0	6	3
By	3	Bacteriology	2	0	2
Dh	25	Market Milk	3	3	4
		Elective			3
					18

			Rec.	Lab.	Cr.
Ag	8	Soil Management	3	0	3
An	36	Physiology of Domestic Animals	3	0	3
By	54	Dairy Bacteriology‡	2	4	3
Eh	6	Tech. Composition	2	0	2
		Elective			7
					18

Senior Year

FALL SEMESTER

Subject			Hours Rec.	Lab.	Cr.
An	37	Animal Hygiene	3	0	3
An	55	Animal Nutrition	3	0	3
An	63	Seminar	1	0	1
		Elective			11
					18

SPRING SEMESTER

Subject			Hours Rec.	Lab.	Cr.
An	60	Animal Breeding	2	3	3
An	64	Seminar	1	0	1
Dh	58	Ice Cream Mfg.	2	4	4
Fm	74	Farm Management	3	3	4
		Elective			6
					18

CURRICULUM IN DAIRY TECHNOLOGY

Sophomore Year

			Rec.	Lab.	Cr.
Bc	1	Organic Chemistry	2	2	3
Dh	1	General Dairying	2	2	3
Md	1	Funds. of Drafting	0	4	2
Mt	3	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0
		Elective			8
					18

			Rec.	Lab.	Cr.
An	22	Dairy Cattle	2	2	3
Bc	2	Biochemistry	3	2	4
Dh	32	Butter Making	2	4	3
Fm	48	Agri. Economics	3	0	3
Md	2	Elem. Mach. Draft.	0	4	2
Mt	4	Military Training	2	1	2
Pe	4	Phy. Education	0	2	0
					18

Junior Year

			Rec.	Lab.	Cr.
By	1	Bacteriology	0	6	3
By	3	Bacteriology	2	0	2
Dh	25	Market Milk	3	3	4
Ps	3	Des. Physics	3	0	3
		Elective			6
					18

			Rec.	Lab.	Cr.
By	54	Dairy Bacteriology‡	2	4	3
Dh	26	Judging Milk and Milk Products	0	2	1
Dh	34	Condensed Milk‡	2	3	3
Eh	6	Tech. Composition	2	0	2
Fm	54	Agri. Accounting	2	2	3
		Elective			6
					18

Senior Year

			Rec.	Lab.	Cr.
Bc	57	Biological Colloids	2	4	4
Dh	33	Cheese Making	2	4	4
Dh	51	Dairy Technology	3	0	3
Dh	55	Dairy Refrigeration	3	0	3
Dh	61	Dairy Tech. Seminar	1	0	1
		Elective			4
					19

			Rec.	Lab.	Cr.
Dh	58	Ice Cream Making	2	4	4
Dh	61	Dairy Tech. Seminar	1	0	1
Dh	64	Adv. Dairy Products Control	0	4	2
Dh	66	Dairy Machinery‡	0	6	3
Fm	88	Marktg. Dairy Prod.	3	0	3
		Elective			5
					18

Dairy Husbandry and Dairy Technology

1. General Dairying.—Milk, its secretion, composition, properties, pasteurization, and separation. Testing dairy products for fat (Babcock method), acidity, total solids, and common adulterations. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. DORSEY, MR. RAMSDELL

25. Market Milk.—The market-milk industry from standpoints of production, supply, sanitary control, transporation, processing, delivery, organization, and economic aspects. Prerequisite, Course 1. Classroom, *three hours a week;* laboratory, *three hours a week. Four credit hours.* MR. RAMSDELL

26. Judging Milk and Milk Products.—Study and practice of methods employed in scoring and judging milk and milk products. Laboratory, *two hours a week. One credit hour.* MR. RAMSDELL

32. Butter Making.—Creamery butter industry. Starter making, cream ripening, churning, and preparing butter for market. Prerequisite, Course 1. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. RAMSDELL

33. Cheese Making.—Manufacture and curing of various types of cheese, including cheddar and soft cheeses adapted to the New England trade. Prerequisite, Course 1. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. DORSEY

34. Condensed Milk.‡—Manufacture of unsweetened and sweetened condensed milk, and milk powder. Prerequisite, Course 1. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. DORSEY

51. Dairy Technology.—Milk products and by-products, methods of manufacture and processing, and scrutiny of recent literature relating to advances in dairy technology. Lectures and assigned readings. *Three credit hours.* MR. DORSEY

53. 54. Problems in Dairy Husbandry.—*Credit, arranged.* MR. DORSEY

55. Dairy Refrigeration.—Principles of refrigeration, refrigeration machinery and equipment, and applications of refrigeration to milk and milk products. *Three credit hours.* MR. DORSEY

58. Ice Cream Making.—Manufacture of ice cream and ices. Prerequisites, Courses 51 and 55. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. DORSEY

61. 62. Dairy Technology Seminar.—Recent and current literature dealing with research problems and the industrial application of research findings in the technological field of the dairy industry. For seniors majoring in Dairy Technology. *One credit hour.* MR. DORSEY, MR. RAMSDELL

64. Advanced Dairy Products Control.—Approved methods of testing dairy products, chemical, physical, and bacteriological, used for control purposes in the dairy industry, and the practical application of such new tests as they are introduced. Laboratory, *six hours a week. Two credit hours.* MR. DORSEY, MR. RAMSDELL

66. Dairy Machinery.‡—Milk and milk-products machinery, accessory machinery, and plant layout. Prerequisite, Course 51. Laboratory, *six hours a week. Three credit hours.* MR. DORSEY

125. Graduate Thesis.—*Credit, arranged.* MR. DORSEY

Course For Two-Year Agriculture

2TY. Dairy Husbandry.—Composition and properties of milk; sanitary production; Babcock testing of milk and milk products; processing market milk; manufacture of butter, cheese and ice cream. Classroom, *three hours a week;* laboratory, *four hours a week. Five credit hours.* MR. RAMSDELL

GENERAL AGRICULTURE

A curriculum designed for students desiring a general rather than a specific type of agricultural training. Students interested in public service fields, or in a pre-theological course in agriculture preparatory to theological training for the rural ministry or agricultural missions, will find this curriculum adapted to their needs.

The Dean of the College is the advisor and registering officer for students in this course.

CURRICULUM IN GENERAL AGRICULTURE

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3	Ag	30	Farm Machinery or Farm Power	2	2	3
An	21	Livestock Feeding	3	2	4						
En	21	App. Entomology	3	2	4	Ag	36				
Mt	3	Military Training	2	1	2	Bc	8	Agri. Chemistry	2	0	2
Pe	3	Phy. Education	0	2	0	Fm	48	Agri. Economics	3	0	3
		Elective			6	Mt	4	Military Training	2	1	2
						Pe	4	Phy. Education	0	2	0
						Sh	2	Speech	2	0	2
								Elective			6
					19						18

Junior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
By	3	Bacteriology	2	0	2	Fm	54	Agri. Accounting	2	2	3
Bt	45	Genetics	3	0	3	Fm	76	Agri. Marketing	3	0	3
Eh	5	Tech. Composition	2	0	2			Elective			12
		Elective			11						
					18						18

Senior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Fm	79	Coop. in Agri.	3	0	3	Fm	24	Rural Sociology	3	0	3
		Elective			15	Fm	74	Farm Management	3	3	4
								Elective			11
					18						18

HORTICULTURE

Professor Waring; Associate Professor Clapp; Mr. Littlefield

The single curriculum in Horticulture which follows lays emphasis on a broad coverage of the field. A generous allowance of elective hours, however, makes possible some specialization in lines related to fruits, vegetables, or ornamental horticulture.

CURRICULUM IN HORTICULTURE

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3	Bc	2	Biochemistry	3	2	4
Bc	1	Organic Chemistry	2	2	3	Fm	48	Agri. Economics	3	0	3
En	21	App. Entomology	3	2	3	Ht	30	Home Floriculture	2	2	3
Ht	43	Trees and Shrubs	2	2	3	Mt	4	Military Training	2	1	2
Mt	3	Military Training	2	1	2	Pe	4	Phy. Education	0	2	0
Pe	3	Phy. Education	0	2	0			Elective			7
		Elective			5						
					19						19

Junior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ag	35	Soil Water Control	2	3	3	Ag	8	Soil Management	3	0	3
Bt	53	Plant Physiology	2	4	4	Bt	56	Plant Pathology	2	4	4
By	3	Bacteriology	2	0	2	Ht	46	Home Landscaping	2	2	3
Eh	5	Tech. Composition	2	0	2	Ht	20	Vegetable Growing	2	2	3
Ht	53	Orchard Management‡	3	0	3			Elective			5
		Elective			4						
					18						18

Senior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bt	45	Genetics	3	0	3	Ht	52	Seminar	1	0	1
Ht	51	Seminar	1	0	1			Elective			16
Ht	55	Systematic Pomology‡	2	2	3						
		Elective			11						
					18						17

General Courses

2. Horticulture.—An introductory treatment of practices and principles basic to the production of fruits, vegetables, and flowers, and to ornamental horticulture. *Three credit hours.* MR. WARING, MR. LITTLEFIELD

3. Horticultural Judging.—Judging of fruits, vegetables, and flowers, and of fruit and vegetable products. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. WARING, MR. LITTLEFIELD

4. Plant Propagation.—Principles and methods of propagating plants. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.*

51. 52. Seminar.—*One credit hour.*

MR. WARING, MR. CLAPP, MR. LITTLEFIELD

63. 64. Problems in Horticulture.—Open to juniors and seniors who manifest special interest and the capacity for individual effort, and to graduate students. Consent of the instructor must be obtained before registration. *Credit, arranged.*

MR. WARING, MR. CLAPP

125. Graduate Thesis.—*Credit, arranged.* MR. WARING, MR. CLAPP

Fruits

10. Small Fruits.—Varieties, cultural methods, and handling of strawberries, raspberries, blueberries, grapes, and blackberries. Minor attention given to other bush and bramble fruits. *Three credit hours.*

11. Fruit Handling.—The harvesting, grading, packing, inspection, storage, transportation and selling of apples, with minor attention to processing and to other orchard fruits. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. WARING

53. Orchard Management.‡—Advanced treatment of principles and modern practices in the establishment and care of the commercial orchard. Major attention is given to the apple. *Three credit hours.* MR. WARING

55. Systematic Pomology.‡—A survey of species of fruits and nuts, emphasizing botanical status as well as horticultural classification, varieties, distribution, and use. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. WARING

Vegetables

20. Vegetable Growing.—Culture, soil management, and adaptability of varieties to the environment as applied to home and commercial gardens. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.*

21. Market Vegetable Production.‡—Commercial practices employed in the culture, insect and disease control, storage, and marketing of certain vegetable crops. Survey of recent experimental work pertinent to vegetable production. *Three credit hours.* MR. LITTLEFIELD

25. Vegetable Varieties.‡—Study of recommended varieties of vegetables. History, distribution, nomenclature, botanical relationships of species. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. LITTLEFIELD

Floriculture and Ornamental Horticulture

30. Home Floriculture.—The culture and care of garden flowers and house plants, and the use of flowers in the home. Open to any student. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. CLAPP

31; 32. Commercial Floriculture.—The application of modern plant growing science to greenhouse practice and a brief study of greenhouse crops. Field trips. Prerequisite, Course 30. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. CLAPP

43. Trees and Shrubs.—Woody plant materials, emphasizing identification, nomenclature, their special characteristics, and management. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. CLAPP

45. Recreational Landscaping.—Principles of design of picnic areas, campgrounds, and other features of outdoor recreation; roadside improvement; consideration of city, town, state, and national parks. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. CLAPP

46. Home Landscaping.—Principles of landscape design with particular reference to the home grounds. Observational trips. Prerequisite, training in mechanical drawing. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. CLAPP

Course For Two-Year Agriculture

6TY. Fruit Growing.—Principles and practical considerations in choice of site and of varieties, planting, pruning, soil management, and pest control of apples. Minor attention to pears and other tree fruits. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. WARING

POULTRY HUSBANDRY

PROFESSOR SMYTH; ASSISTANT PROFESSOR ————; MR. HOWES

CURRICULUM IN POULTRY HUSBANDRY

Sophomore Year

FALL SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Ag	1	Soils	2	2	3
An	21	Livestock Feeding	3	2	4
Bc	1	Organic Chemistry	2	2	3
Dh	1	Gen. Dairying	2	2	3
En	21	App. Entomology	3	2	4
Mt	3	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0
					19

SPRING SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Ag	16	Forage Crops	2	2	3
Bc	2	Biochemistry	3	2	4
Fm	48	Agri. Economics	3	0	3
Mt	4	Military Training	2	1	2
Pe	4	Phy. Education	0	2	0
		Elective			7
					19

Junior Year

			Rec.	Lab.	Cr.
An	35	Anatomy of Domestic Animals	2	2	3
Bt	45	Genetics	3	0	3
By	1	Bacteriology	0	6	3
By	3	Bacteriology	2	0	2
Eh	5	Tech. Composition	2	0	2
Ph	23	Poultry Judging	1	2	2
		Elective			4
					19

			Rec.	Lab.	Cr.
An	36	Physiology of Domestic Animals	3	0	3
By	52	Path. Bacteriology and Serol. Meth.	2	4	4
Ph	28	Poultry Breeding	2	0	2
Ph	32	Inc. and Brooding	2	2	3
		Elective			6
					18

Senior Year

			Rec.	Lab.	Cr.
Fm	89	Mktg. Poultry Prod.	3	0	3
Ph	25	Poultry Feeding	1	2	2
Ph	53	Seminar	1	0	1
		Elective			11
					17

			Rec.	Lab.	Cr.
Fm	74	Farm Management	3	3	4
Ph	40	Poultry Diseases	3	0	3
Ph	46	Poultry Farm Mgt.	1	2	2
Ph	54	Seminar	1	0	1
		Elective			7
					17

2. Poultry Husbandry.—A general course in poultry production, incubation, brooding, housing, feeding, breeding and management. *Three credit hours.* MR. SMYTH, MR. HOWES

23. Poultry Judging.—Selection and judging of poultry with special emphasis on production judging. Laboratory practice in judging both utility and ex-

hibition poultry. Prerequisite, Course 1. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. HOWES

25. Poultry Feeding.—General principles of nutrition as applied to poultry; poultry feeds; calculating rations; feeding methods and cost of feeding. Laboratory work will consist of demonstrating vitamin and other nutritional deficiencies. Prerequisites, Course 1 and Bc. 1. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. ———

28. Poultry Breeding.—Principles of inheritance as applied to poultry; systems of breeding; and study of pedigrees and breeding results. Prerequisites, Course 1 and Bt. 45. *Two credit hours.* MR. HOWES

32. Incubation and Brooding.—Principles of incubation and brooding. Laboratory practice in incubation and brooder management. Prerequisite, Course 1. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. HOWES

40. Poultry Diseases.—Principles of hygiene and sanitation applied to the prevention and control of the diseases of poultry, including a detailed consideration of the pathological processes involved in the common diseases. *Three credit hours.* MR. WITTER

46. Poultry Farm Management.—The business of poultry farming; cost of production and management practices. Prerequisites, Courses 1, 25, 28, and 32. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. SMYTH

51. 52. Problems in Poultry Husbandry.—*Credit arranged.* MR. SMYTH, MR. ———, MR. HOWES

53. 54. Seminar.—A study of poultry organizations and literature giving results of recent research work. Prerequisites, Courses 1, 25, 28, and 32. *One credit hour.* MR. SMYTH

125. Gradaute Thesis.—*Credit arranged.* MR. SMYTH

Courses For Two-Year Agriculture

1TY. Poultry Husbandry.—A general course in poultry production. The practical application of the principles of incubation, brooding, housing, feeding, breeding and management of poultry. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. HOWES

3TY. Poultry Feeding.—General principles of nutrition as applied to poultry; poultry feeds; calculating rations; feeding methods and cost of feeding. *Two credit hours.* MR. SMYTH

4TY. Poultry Management.—The business of poultry farming; cost of production; management and disease control. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. HOWES

TWO-YEAR COURSE IN AGRICULTURE

DIRECTOR LORING

This is a course of training for young men who wish to become practical farmers, farm superintendents, dairymen, poultrymen, fruit-growers, or gardeners,

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* This course also appears under the Department of Animal Industry.

but who cannot devote time to full high-school or college training. It is also open to women.

A significant degree of specialization is possible in either Dairy and Livestock Farming, Floriculture, Fruit Growing, Potato Production, or Poultry Raising through a proper choice of elective subjects.

On completion of the course a certificate is awarded those who have satisfactorily met the requirements.

First Year

FALL SEMESTER

Subject			Hours Rec.	Lab.	Cr.
Ag	1TY	Farm Crops	2	2	3
Agr	1	Orientation	1	0	½
An	1TY	Animal Husbandry	3	2	4
Bc	3TY	Farm Chemistry	2	0	2
Bt	3TY	Botany and Plant Diseases	1	2	2
Ph	1TY	Poultry Husbandry	2	2	3
		Elective			5
					19½

SPRING SEMESTER

Subject			Hours Rec.	Lab.	Cr.
Ag	2TY	Soils and Fertilizers	3	3	4
Ag	8TY	Farm Machinery	2	3	3
Agr	2	Orientation	1	0	½
Eh	2TY	English Composition	2	0	2
Fm	2TY	Farm Economics	2	0	2
		Elective			8
					19½

Second Year

Subject			Rec.	Lab.	Cr.
Ag	9TY	Farm Eng. & Mech.	2	3	3
Ag	41	Farm Shop*	0	4	2
Eh	3TY	English Composition	2	0	2
En	5TY	Farm Insects	1	2	2
Fm	3TY	Farm Management*	2	3	3
Fy	1TY	Forestry	1	3	2
		Elective			6
					20

Subject			Rec.	Lab.	Cr.
Ag	10TY	Farm Power	2	3	3
Ag	42	Farm Shop*	0	4	2
Fm	4TY	Mktg. Farm Products	3	0	3
Sh	2	Speech	2	0	2
		Elective			10
					20

Elective Courses

			Rec.	Lab.	Cr.
Ag	3TY	Potato Production	2	2	3
Ag	7TY	Agricultural Arith.	2	0	2
An	5TY	Livestock Feeding†	3	2	4
An	7TY	Animal Diseases	3	0	3
Ht	11	Fruit Handling	2	2	3
Ht	31	Com. Floriculture	2	2	3
Ht	43	Trees and Shrubs	2	3	3
Ht	53	Orchard Mgt.	3	0	3
Ph	25	Poultry Feeding	2	0	2
Ph	3TY	Poultry Feeding	2	0	2

			Rec.	Lab.	Cr.
Ag	8	Soil Management	3	0	3
Ag	16	Forage Crops	2	2	3
An	22	Dairy Cattle	2	2	3
An	24	Livestock Production	3	2	4
Dh	2TY	Dairy Husbandry	3	4	5
Dh	26	Judging Milk and Products	0	2	1
Ht	6TY	Fruit Growing	2	2	3
Ht	10	Small Fruits	2	2	3
Ht	20	Home Vegetable Gardening	2	2	3
Ht	30	Home Floriculture	2	2	3
Ht	46	Home Landscaping	2	3	3
Ph	4TY	Poultry Management	2	2	3

* Not required in Floriculture sequence.

† Required in Dairy, Poultry, and Potato sequences.

DEPARTMENT OF BACTERIOLOGY AND BIOCHEMISTRY, BOTANY AND ENTOMOLOGY

COMMON FRESHMAN CURRICULUM FOR STUDENTS MAJORING IN BACTERIOLOGY, BIOCHEMISTRY, BOTANY AND ENTOMOLOGY

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ch	1	Gen. Chemistry	3	3	4	Ch	2	Gen. Chemistry	3	3	4
Eh	1	Freshman Comp.	3	0	3	Eh	2	Freshman Comp.	3	0	3
Ms	1	Trigonometry	2	0	2	Ms	4	Anal. Geom. & Calc.	4	0	4
Ms	3	College Algebra	2	0	2	Mt	2	Military Training	2	1	1½
Mt	1	Military Training	2	1	1½	Pe	2	Phy. Education	0	2	0
Pe	1	Phy. Education	0	2	0	Sh	6	Persuasive Speech	2	0	2
Sh	1	Speech	2	0	2	Zo	4	Animal Biology	2	4	4
Zo	3	Animal Biology	2	4	4						
					18½						18½

BACTERIOLOGY AND BIOCHEMISTRY

Professors Hitchner, Smith, and Pedlow; Assistant Professor Powelson; Miss Balch, Mr. Leonard, Mr. Angel

CURRICULUM IN BACTERIOLOGY

Sophomore Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ch	31	Micro-Qual. Anal.	2	3	3	Ch	40	Quant. Anal.	1	8	4
Ch	51	Organic Chemistry	3	4	5	Ch	52	Organic Chemistry	3	4	5
Es	1	Prin. of Economics	3	0	3	Es	6	Comp. Econ. Systems	3	0	3
Mt	3	Military Training	2	1	2	Mt	4	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0	Pe	4	Phy. Education	0	2	0
		Elective			6			Elective			5
					19						19

Junior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bc	9	Biochemistry	3	0	3	Bc	60	Physiol. Chem.	3	3	4
By	1	Bacteriology	0	6	3	By	52	Path. Bact. and Serol. Meth.	2	4	4
By	3	Bacteriology	2	0	2	By	54	Dairy Bact.	1	4	3
Ps	3	Des. Physics	3	0	3			Elective			7
		Elective			7						
					18						18

Senior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bc	57	Biological Colloids	2	4	4	Bc	64	Biochem. Lab. Meth.	0	6	3
By	61	Seminar	1	0	1	By	56	Fermentation Mech.	1	4	3
By	91	Problems in Bact.	0	6	3	By	62	Seminar	1	0	1
Eh	5	Tech. Composition	2	0	2	By	92	Problems in Bact.	0	6	3
		Elective			8			Elective			8
					18						18

CURRICULUM IN BIOCHEMISTRY

Sophomore Year

FALL SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Ch	31	Micro-Qual. Anal.	2	3	3
Ch	51	Organic Chemistry	3	4	5
Es	1	Prin. of Economics	3	0	3
Ms	7	Calculus	5	0	5
Mt	3	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0
					18

SPRING SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Ch	40	Quant. Anal.	1	8	4
Ch	52	Organic Chemistry	3	4	5
Es	6	Comp. Econ. Systems	3	0	3
Mt	4	Military Training	2	1	2
Pe	4	Phy. Education	0	2	0
		Elective			5
					19

Junior Year

			Rec.	Lab.	Cr.
Bc	9	Biochemistry	3	0	3
Bc	53	Agri. & Food Anal.	0	6	3
By	1	Bacteriology	0	6	3
By	3	Bacteriology	2	0	2
Ps	1	General Physics	4	2	5
		Elective			3
					18

			Rec.	Lab.	Cr.
Bc	60	Physiol. Chem.	3	3	4
Bc	64	Biochem. Lab. Meth.	0	6	3
Ps	2	General Physics	4	2	5
		Elective			6
					18

Senior Year

			Rec.	Lab.	Cr.
Bc	57	Biological Colloids	2	4	4
Bc	61	Adv. Biochemistry	3	0	3
Bc	91	Biochem. Research	0	6	3
By	61	Seminar	1	0	1
Eh	5	Tech. Comp.	2	0	2
		Elective			5
					18

			Rec.	Lab.	Cr.
Bc	92	Biochem. Research	0	6	3
By	62	Seminar	1	0	1
By	56	Fermentation Mech.	1	4	3
		Elective			11
					18

Bacteriology

1. Bacteriology.—A laboratory course in general bacteriology. Open to all students. Includes the preparation of the usual culture media and study of morphological and biological characteristics of typical bacteria. Course 3 must be taken in conjunction. Laboratory, *six hours a week. Three credit hours.*

MISS POWELSON, MISS BALCH

2. Sanitary Bacteriology.—Similar to Course 1. Offered for students in the College of Technology and others who may elect it. Special emphasis is placed upon bacteriology of water and sewage. Prerequisite, Course 3. Laboratory, *six hours a week. Three credit hours.* MISS BALCH

3. Bacteriology.—A lecture course in general bacteriology open to all students. It must be elected by students taking Course 1 or 2. *Two credit hours.*

MR. HITCHNER

5. Bacteriology.—An abbreviated laboratory course in general bacteriology. Practical demonstrations of the relation of bacteria to disease, sanitation, food handling, and other economic phases are given. The aim is appreciation of

bacteriological technic. Course 3 must be taken in conjunction. Laboratory, *two hours a week. One credit hour.* MR. HITCHNER

7 (8). Bacteriology for Nurses.—An elementary course in bacteriology as it applies to nursing. Emphasis on sanitation, infection and resistance, and bacteriology of infectious diseases. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MISS POWELSON

10. Fundamentals of Public Health.—General consideration of the relationship between the health of the individual and environment. Sanitary programs for the home and community such as sewage disposal, safe water supplies, industrial sanitation, and dust menaces. Prerequisite, Course 3. *Two credit hours.* MISS POWELSON

52. Pathogenic Bacteria and Serological Methods.—Physiological, morphological, biochemical, and serological activities of bacteria; isolation; and identification of pathogens together with animal inoculation and serological tests. Prerequisites, Courses 3 and 1 or 2. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. HITCHNER, MR. LEONARD

54. Bacteriology (Dairy).‡—Microorganisms associated with milk and dairy products; factors influencing their development and control. Prerequisites, Courses 3 and 1 or 2. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. HITCHNER, MISS BALCH

55. Bacteriology (Soil).—Theoretical and experimental consideration of the relationship of microorganisms and soil fertility. Factors which influence the changes produced through microbial action. Prerequisites, Courses 3 and 1 or 2. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. HITCHNER

56. Fermentation Mechanisms.‡—Theory and practice in bacterial fermentations of foods and industrial materials. Biochemistry of bacterial fermentations. Prerequisites, Courses 3 and 1 or 2. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MISS POWELSON

61. 62. Seminar.—Preparation and presentation of papers dealing with current researches and developments in the fields of bacteriology. *One credit hour.* MR. HITCHNER

91. 92. Problems in Bacteriology.—A laboratory and conference course for students desiring to pursue some particular line of bacteriological investigation or applied food technology. Open only to students who have done considerable work in bacteriology. *Credit, arranged.* MR. HITCHNER, MISS POWELSON

125. Graduate Thesis.—*Credit, arranged.* MR. HITCHNER, MISS POWELSON

Biochemistry

1. Organic Chemistry.—For agricultural students. The aliphatic compounds; hydrocarbons, alcohols, acids, amines, amides, etc., and brief resume of the more important aromatic compounds. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MR. SMITH, MR. ANGEL

2. Biochemistry.—H-ion concentration, colloids; the properties, digestion, metabolism and excretion of carbohydrates, fats and proteins; enzymes, vitamins and hormones. Prerequisite, Course 1. Classroom, *three hours a week;* laboratory, *two hours a week. Four credit hours.* MR. SMITH, MR. ANGEL

4. Organic Chemistry.—The hydrocarbons, alcohols, aldehydes, acids, fats, carbohydrates, proteins, and related substances. Prerequisite, Chemistry 5. Class-

room, *three hours a week;* laboratory, *two hours a week. Four credit hours.*
MR. PEDLOW, MR. ANGEL

8. Agricultural Chemistry.—The chemistry of plants, animals, soils, fertilizers, insecticides, milk, and related topics. *Two credit hours.* MR. SMITH

9. Biochemistry.—Animal biochemistry. Composition of the animal body; chemistry of digestion and metabolism of foods; chemistry of blood and waste products. Prerequisite, Course 4. *Three credit hours.* MR. PEDLOW

53. Agricultural Analysis.—Quantitative analysis of fertilizers, foods, dairy products, and textile materials. Type of work will be adapted to needs of the student. Prerequisites, Courses 1 and 2, or 4. Laboratory, *four to six hours a week. Two or three credit hours.* MR. SMITH

57. Biological Colloids.—An introduction to colloidal chemistry with application and significance in biological systems. Open to junior, senior, and graduate students. Prerequisites, Courses 1 and 2, or 9, and Physics 3 or equivalent. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.*
MR. PEDLOW

60. Physiological Chemistry.—The physiological utilization of the carbohydrates, fats, and proteins with special emphasis upon the functions of enzymes, hormones, and vitamins. Prerequisites, Chemistry 51 and 52. Classroom, *three hours a week;* laboratory, *three hours a week. Four credit hours.* MR. PEDLOW

61. Advanced Biochemistry.—Detailed treatment of the proteins, carbohydrates, lipids, and biological oxidation. Prerequisite, Course 60. *Three credit hours.* MR. PEDLOW

64. Biochemical Laboratory Methods.—Methods used in the biochemical laboratory for testing carbohydrates, fats, amino acids, proteins, enzymes; studies of the colloidal properties of biochemical material; H-ion concentration measurement methods. Prerequisite, Course 53 or Chemistry 40. Laboratory, *six hours a week. Three credit hours.* MR. PEDLOW

91. 92. Biochemical Research.—Problems dealing with various phases of biological or agricultural chemistry. Special problems may be selected by the student under direction and advice of the department. A comprehensive written summary is required. Open only to senior and graduate students. *Credit, arranged.*
MR. SMITH, MR. PEDLOW

125. Graduate Thesis.—*Credit, arranged.* MR. HITCHNER, MR. PEDLOW

Course For Two-Year Agriculture

3TY. Farm Chemistry.—A review of general chemistry; chemistry of plant and animal life as related to agriculture; fungicides and insecticides; gasoline and oil. *Two credit hours.* MR. ANGEL

BOTANY AND ENTOMOLOGY

PROFESSORS STEINMETZ AND DIRKS; ASSOCIATE PROFESSOR HYLAND; ASSISTANT PROFESSORS OGDEN AND PRINCE; MR. OLSON, MR. TUTTLE, MRS. CARLTON, MR. GRAHAM, MR. PLAISTED

Students interested in botany and entomology as applied to agriculture or forestry may transfer from either the Agriculture or the Forestry curriculums at the beginning of the sophomore year. Others will be guided by the freshman curriculum outlined on page 81.

CURRICULUM IN BOTANY

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bc	1	Organic Chemistry	2	2	3	Bc	2	Biochemistry	3	2	4
		or						or			
Ch	31	Micro-Qual. Anal.	2	3		Ch	40	Quant. Anal.	1	8	
Bt	1	General Botany	2	4	4	Bt	36	Taxonomy	2	4	4
By	3	Bacteriology	2	0	2	By	2	Sanitary Bact.	0	6	3
En	21	Applied Entomology	3	2	4	Mt	4	Military Training	2	1	2
Md	1	Funds. of Drafting	0	4	2	Pe	4	Phy. Education	0	2	0
Mt	3	Military Training	2	1	2			Elective			6
Pe	3	Phy. Education	0	2	0						
		Elective			2						
					19						19

Junior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bt	33	Forest Botany	2	4	4	Bt	34	Forest Botany	1	3	2
Bt	53	Plant Physiology	2	4	4	Bt	56	Plant Pathology	2	4	4
Bt	57	Tax. of Vas. Plants‡				Eh	10	Modern Literature	2	0	2
		or	2	4	4			Elective			10
Bt	59	Gen. Mycology‡									
Eh	5	Technical Comp.	2	0	2						
		Elective			4						
					18						18

Senior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bt	45	Genetics	3	0	3	Bt	30	Plant Ecology	1	2	2
Bt	57	Tax. of Vas. Plants‡				Bt	46	Genetics Lab.	0	4	2
		or	2	4	4	Es	6	Comp. Econ. Systems	3	0	3
Bt	59	Gen. Mycology‡						Elective			11
Es	1	Prin. of Economics	3	0	3						
		Elective			8						
					18						18

CURRICULUM IN ENTOMOLOGY

Sophomore Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bc	1	Organic Chemistry	2	2	3	Bc	2	Biochemistry	3	2	4
		or						or			
Ch	31	Micro-Qual. Anal.	2	3		Ch	40	Quant. Anal.	1	8	
Bt	1	General Botany	2	4	4	Bt	36	Taxonomy	2	4	4
En	21	Applied Entomology	3	2	4	En	26	Gen. Entomology	2	4	4
Md	1	Funds. of Drafting	0	4	2	Mt	4	Military Training	2	1	2
Mt	3	Military Training	2	1	2	Pe	4	Phy. Education	0	2	0
Pe	3	Phy. Education	0	2	0			Elective			5
		Elective			4						
					19						19

Junior Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bt	33	Forest Botany	2	4	4	Bt	34	Forest Botany	1	3	2
By	3	Bacteriology	2	0	2	Bt	56	Plant Pathology	2	4	4
Eh	5	Technical Comp.	2	0	2	By	2	Sanitary Bact.	0	6	3
En	51	Morphol. of Insects‡				Eh	10	Modern Literature	2	0	2
		or	2	4	4	En	46	Ad. Forest Ent.	1	2	2
En	53	Taxonomy of Insects						Elective			5
		Elective			6						
					18						18

Senior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Bt	45	Genetics	3	0	3	Bt	30	Plant Ecology	1	2	2
En	49	Econ. Entomology‡	2	2	3	Bt	46	Genetics Lab.	0	4	2
Es	1	Prin. of Economics	3	0	3	En	30	Apiculture	1	2	2
Zo	15	Comp. Anatomy	2	4	4	Es	6	Comp. Econ. Systems	3	0	3
		Elective			5			Elective			9
					18						18

Courses in Botany

1 (2). General Botany.—Fundamental principles of plant life. Required of all students in the College of Agriculture excepting those registered in Agricultural Engineering and Home Economics. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.*

MR. PRINCE, MRS. CARLTON, MR. GRAHAM

30. Plant Ecology.—Environmental factors determining adaptations and distribution of plant life. Prerequisite, Course 1 or 2. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. OGDEN

32. Plant Physiology.—For students in Forestry. Prerequisite, Course 1 or 2 and one year of chemistry. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. STEINMETZ, MR. PLAISTED

33. Dendrology (Hardwoods).—Classroom and field work on identification and classification of trees and native shrubs of North America. Prerequisite, Course 1 or 2. Classroom, *two hours a week;* laboratory, *four hours a week, Four credit hours.* MR. HYLAND, MR. OGDEN

34. Dendrology (Conifers).—Continuation of Course 33. Botanical and commercial ranges of timber trees of North America. Prerequisite, Course 33. Classroom, *one hour a week;* laboratory, *three hours a week. Two credit hours.*

MR. HYLAND

35. Plant Anatomy.—Structure of woody and herbaceous plants. Prerequisite, Course 1 or 2. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. HYLAND, MR. GRAHAM

36. Taxonomy.—Identification of herbaceous flowering plants, with emphasis upon those of wildlife importance. Prerequisite, Course 1 or 2. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. OGDEN

41. Biotic Relationships.—Interrelationships of organisms with emphasis

upon the lower plant forms. Prerequisite, Course 36. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. OGDEN

42. Forest Pathology.—Principles of plant disease, as applied to seedlings, nursery stock, and forest trees; destruction of timber by fungi; and principles of control. Required of seniors in Forestry. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. PRINCE

43. Wood Structure and Identification.—Identification of commercial woods with the unaided eye, lens, and microscope. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. HYLAND

(44) 45. Genetics.—Principles of genetics. Prerequisite, one year of biology. Open to juniors and seniors. *Three credit hours.* MR. STEINMETZ

46. Genetics Laboratory.—Breeding of Drosophila. Study of plant materials. Supplementary reading. Laboratory, *four hours a week. Two credit hours.* MR. STEINMETZ, MR. OGDEN

50. Histological Technique.—Methods and technique in the preparation of microscopic sections of plant material. Classroom, *one hour a week;* laboratory, *six hours a week. Three credit hours.* MR. HYLAND

53. Plant Physiology.—Classroom and laboratory work on the physiology of plants. Prerequisites, Course 1 or 2 and one year of chemistry. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. STEINMETZ, MR. PLAISTED

56. Plant Pathology.—Principles of plant disease. Open to juniors and seniors. Prerequisite, Course 1 or 2. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. STEINMETZ

57. Taxonomy of Vascular Plants.‡—Characteristics, identification, and classification of representative species of vascular plants. Prerequisite, Course 1 or 2. Classroom, *two hours a week;* laboratory and field, *four hours a week. Four credit hours.* MR. OGDEN

59. General Mycology.‡—Morphology, identification, and classification of representative species of fungi. Prerequisite, Course 1 or 2. Classroom, *two hours a week;* laboratory and field, *four hours a week. Four credit hours.* MR. PRINCE

Courses in Entomology

21. Applied Entomology.—Fundamental principles of insect life, principles of control, and the relations of insects to plants and animals. Classroom, *three hours a week;* laboratory, *two hours a week. Four credit hours.* MR. DIRKS, MR. OLSON, MR. TUTTLE

22. Forest Entomology.—Principles of insect life with special reference to forest and shade trees. Structure, metamorphosis, classification, and methods of control. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. DIRKS, MR. OLSON, MR. TUTTLE

26. General Entomology.—Principles of insect life with special reference to wildlife conservation. A study of structure, metamorphosis and classification. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. OLSON

30. Apiculture.—Practical care of bees. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. DIRKS

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* Admission by arrangement with instructor.

46. **Advanced Forest Entomology.—Insects destructive to trees and to forest products. Prerequisite, Course 21 or 22. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. DIRKS, MR. TUTTLE

49. **Economic Entomology.‡—Economically important insects of the orchard, garden and farm. Prerequisite, Course 21 or 22. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.*

MR. DIRKS, MR. TUTTLE

*51. **Morphology of Insects.**‡—A study of external and internal anatomy of insects. Laboratory includes gross dissections of internal organs of representative insects. Prerequisite, Course 21, 22, or 53. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. OLSON

*53. **Taxonomy of Insects.**—Study of insects with emphasis upon classification. Directed field trips on collecting, identification and habitat of local species of insects. Wing venation. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. OLSON, MR. TUTTLE

Problem Courses

*47. 48. **Problems in Botany or Entomology.**—Open to juniors and seniors who have special interest and qualification in botany or entomology. The approval of the head of the department is required. *Credit, arranged.*

MEMBERS OF THE DEPARTMENTAL STAFF

*105. 106. **Problems in Entomology.**—*Credit, arranged.* MR. DIRKS

*107. 108. **Problems in Botany.**—*Credit, arranged.* MR. STEINMETZ

*125. **Graduate Thesis.**—*Credit, arranged.* MR. STEINMETZ

Courses For Two-Year Agriculture

*3TY. **Botany and Plant Diseases.**—Elementary treatment of plant structures and functions. Representative plant diseases. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. GRAHAM

*5TY. **Farm Insects.**—Habits, life histories and controls of the destructive insects common on farm crops and livestock. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.* MR. TUTTLE

FORESTRY

PROFESSOR ASHMAN; ASSOCIATE PROFESSORS BAKER AND MENDALL; ASSISTANT PROFESSORS BEYER, GIDDINGS, AND KUTZ; MR. GASHWILER, MR. PLUMMER, MR. RANDALL

Forestry

The four-year undergraduate curriculum in Forestry, arranged to meet the requirements of the profession, is offered to students wishing to qualify for technical and administrative positions in forestry, or for admission to advanced standing in forestry schools giving postgraduate work. The curriculum also renders a student eligible for Civil Service examinations for the position of Junior Forester in

* Admission by arrangement with instructor.

the United States Forest Service and in other Federal bureaus employing foresters. The broad scientific and cultural training offered in this curriculum forms an excellent basis for a liberal education. Upon completion of the Forestry course the student is granted the degree of Bachelor of Science. Five courses in the undergraduate curriculum are open for graduate students majoring in curricula other than Forestry.

The University manages a tract of 1,700 acres of forest land, near the campus, where the students carry on much of their field work.

In addition, two camp courses are required. A course in the Elements of Woods Practice is required of all students just prior to the beginning of the sophomore year excepting under the following conditions: a student employed previously in woods work approved by the faculty or in some approved wood-using industry, upon the presentation of evidence that he has done satisfactory work, shall be excused from participation in the freshman camp. During the summer following the junior year all students are required to attend a camp owned and operated by the Forestry Department on Indian Township, a tract of approximately 17,000 acres, near Princeton, Maine.

Wildlife Conservation

The four-year undergraduate curriculum in Wildlife Conservation, leading to the degree of Bachelor of Science, prepares the student for the management of fish, game birds and animals, and fur bearers on Federal, state, and privately owned land, appointments in the Federal service being obtained through Civil Service examinations for which graduates are eligible. The first year of the Wildlife curriculum is the same as that required in Forestry.

A limited number of graduate courses in Wildlife Conservation are available to students with sufficient undergraduate background, and well-qualified students with an aptitude for research are advised to pursue graduate work preparing them for employment in Federal, state, and college experiment stations. Some electives may be taken by undergraduates in direct preparation for such advanced study.

CURRICULUM IN FORESTRY AND WILDLIFE CONSERVATION

Freshman Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ch	1	General Chemistry	3	3	4	Bt	2	Botany	2	4	4
Eh	1	Freshman Comp.	3	0	3	Ch	2	General Chemistry	3	3	4
Fy	1	Elements of Forestry	2	0	2	Eh	2	Freshman Comp.	3	0	3
Fy	47	Orientation	1	0	0	Fy	2	Elements of Forestry	2	0	2
Md	1	Funds. of Drafting	0	4	2	Md	12	Forestry Drafting	0	4	2
Ms	9	Trigonometry	2	0	2	Ms	10	Trigonometry	2	0	2
Mt	1	Military Training	2	1	1½	Mt	2	Military Training	2	1	1½
Pe	1	Phy. Education	0	2	0	Pe	2	Phy. Education	0	2	0
Zo	1	Zoology	2	4	4						
					18½						18½

Freshman Summer Camp

Subject			Hours Cr.
Fy	21s	Elements of Woods Practice	2

CURRICULUM IN FORESTRY

Sophomore Year

FALL SEMESTER

Subject			Hours Rec.	Lab.	Cr.
Bt	33	Dendrology (Hardwoods)	2	4	4
Ce	1	Plane Surveying	3	0	3
Ce	3	Field Work & Plotting	0	9	3
Es	1	Prin. of Economics	3	0	3
Mt	3	Military Training	2	1	2
Ps	1	General Physics	4	2	5
Pe	3	Phy. Education	0	2	0
					20

SPRING SEMESTER

Subject			Hours Rec.	Lab.	Cr.
Bt	34	Dendrology (Conifers)	1	3	2
En	22	Forest Entomology	2	4	4
Es	6	Comp. Econ. Systems	3	0	3
Fy	14	Forest Products	2	0	2
Mt	4	Military Training	2	1	2
Ps	2	General Physics	4	2	5
Pe	4	Phy. Education	0	2	0
					18

Junior Year

			Rec.	Lab.	Cr.
Ag	3	Soils (Forest)	2	3	3
Bt	35	Plant Anatomy	2	4	4
Eh	5	Technical Comp.	2	0	2
Fy	3	Logging	2	0	2
Fy	5	Forest Mensuration	2	6	4
Fy	11	Silvics (*Lab. first 9 weeks)	2	*3	2½
					17½

			Rec.	Lab.	Cr.
Fy	4	Administration & Protection	4	0	4
Fy	6	Forest Mensuration (Lab. *6 hours, first 9 weeks; †3 hours, last 9 weeks)	2	*6, †3	3½
Fy	8	Silviculture	3	3	4
Fy	10	Nursery Practice (Last 9 weeks)	0	6	1
Fy	12	Wood Technology	2	0	2
		Elective			2
					16½

Junior Forestry Camp

Subject			Hours Cr.
Ce	7s	Highways and Railroads	2
Fy	41s	Practice of Forestry	8
			10

Senior Year

			Rec.	Lab.	Cr.
Eh	9	Modern Literature	2	0	2
Fy	7	Lumber Manufacture	2	0	2
Fy	51	Regional Silviculture	3	0	3
Fy	53	Forest Finance	2	0	2
Fy	55	Forest Management	3	0	3
		Elective			4
					16

			Rec.	Lab.	Cr.
Bt	42	Forest Pathology	2	4	4
Fy	16	Wood Identification	0	3	1
Fy	52	Policy and Economics	4	0	4
		Elective			7
					16

CURRICULUM IN WILDLIFE CONSERVATION

Sophomore Year

FALL SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Bt	33	Dendrology (Hardwoods)	2	4	4
By	3	Bacteriology	2	0	2
Ce	1	Plane Surveying	3	0	3
Ce	3	Field Work & Plotting	0	9	3
Fy	13	Forest Protection	2	0	2
Mt	3	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0
Zo	9	Ichthyology	2	4	4
					20

SPRING SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Bt	34	Dendrology (Conifers)	1	3	2
Bt	36	Taxonomy	2	4	4
Eh	10	Modern Literature	2	0	2
En	26	Gen. Entomology	2	4	4
Mt	4	Military Training	2	1	2
Pe	4	Phy. Education	0	2	0
Zo	10	Ornithology	2	4	4
					18

Junior Year

			Rec.	Lab.	Cr.
Ag	3	Soils (Forest)	2	2	3
Bt	41	Biotic Relationships	2	3	3
Eh	5	Technical Comp.	2	0	2
Fy	5	Forest Mensuration	2	6	4
Fy	11	Silvics (*Lab. first 9 weeks)	2	*3	2½
		Elective			3
					17½

			Rec.	Lab.	Cr.
Fm	48	Agri. Economics	3	0	3
Fy	6	Forest Mensuration (Lab. *6 hours, first 9 weeks; †3 hours, last 9 weeks)	2	*6, †3	3½
Fy	8	Silviculture	3	3	4
Fy	10	Nursery Practice (Last 9 weeks)	0	6	1
Zo	22	Animal Parasitology	2	3	3
		Elective			3
					17½

Junior Forestry Camp

	Subject	Hours Cr.
Fy 41s	Practice of Forestry	8
Fy 45s	General Ecology	2
		10

Senior Year

			Rec.	Lab.	Cr.
Fy	51	Regional Silviculture	3	0	3
Fy	55	Forest Management	3	0	3
Fy	57	Game Management	3	3	4
Zo	19	Fish Management	3	3	4
		Elective			3
					17

			Rec.	Lab.	Cr.
An	44	Disease and Parasite Control (in Wildlife)	2	2	3
Fy	52	Policy and Economics	4	0	4
		Elective			9
					16

1. Elements of Forestry.—Importance of forestry in our national life. Public and private forestry. General methods of cutting applicable to important commercial species. Required of freshmen majoring in Forestry, and open to other students. *Two credit hours.* MR. ASHMAN, MR. BYER, MR. PLUMMER

2. Elements of Forestry.—A continuation of Course 1, required of fresh-

men majoring in Forestry, and open to other students. Prerequisite, Course 1. *Two credit hours.* MR. ASHMAN, MR. BYER, MR. PLUMMER

3. Logging.—The lumber industry in the United States. Logging methods used in the different forest regions with especial emphasis on the Northeast. *Two credit hours.* MR. PLUMMER

4. Administration and Protection.—Problems in the administration of national, state, and private forest enterprises. Forest improvements, including roads, trails, telephone lines, and lookout towers. Forest fire control. *Four credit hours.* MR. RANDALL

5. Forest Mensuration.—Theory and application of measurements of logs, trees, and stands of timber. Prerequisites, Civil Engineering 1 and 3, Botany 33 and 34. Classroom, *two hours a week;* field work, *six hours a week. Four credit hours.* MR. GIDDINGS, MR. PLUMMER, MR. BYER

6. Forest Mensuration.—A continuation of Course 5. Theory and application of measurement of growth and yield. Interpretation and measurement of aerial photographs in mapping and estimating timber. *Three and one-half credit hours.* MR. GIDDINGS, MR. PLUMMER, MR. BYER

7. Lumber Manufacture.—Milling and marketing problems of the lumber industry in America. Forestry seniors only. *Two credit hours.* MR. BAKER

8. Silviculture.—Methods used to establish forests and to maintain them profitably until maturity including the harvesting of the final stand. Prerequisite, Course 11. Classroom, *three hours a week;* field work, *three hours a week. Four credit hours.* MR. ASHMAN, MR. BYER, MR. PLUMMER

9. Wood Preservation.—Durability and seasoning of native woods; preservatives in commercial use; and equipment and methods of operation of preserving plants. Prerequisites, Botany 33 and 34. *One credit hour.* MR. BAKER

10. Nursery Practice.—Seeding and planting in the practice of forestry. Nursery management. Field planting. A minimum of 48 hours of work in the Nursery or field is required. Last nine weeks. Laboratory, *six hours a week. One credit hour.* MR. PLUMMER

11. Silvics.—Life factors determining the character and form of forest vegetation. The development of forest types. Silvical characteristics of stands. Prerequisites, Botany 33 and 34. First nine weeks. Classroom, *two hours a week;* laboratory, *three hours a week. Two and one-half credit hours.* MR. KUTZ, MR. BYER

12. Wood Technology.—Physical, mechanical, and chemical properties of the important commercial woods of the United States and their uses in the arts and trades. Prerequisites, Botany 33, 34, and 35. *Two credit hours.* MR. BAKER

13. Forest Protection.—Forest enemies, particularly fire, insects, and fungi. General methods for the control of forest fires and the administration of fire-fighting organizations. *Two credit hours.* MR. RANDALL

14. Forest Products.—Forest products other than logs and lumber. Pulpwood, veneers, shingles, cooperage, excelsior, spool stock, turpentine, etc. Methods of utilization, markets, and values. *Two credit hours.* MR. BYER

16. Wood Identification.—Identification and classification of the commercial woods of the United States based on simple lens inspection and gross characters. Laboratory, *three hours a week. One credit hour.* MR. BAKER

18. Preparation and Drafting of Maps.—Instruction in the drafting of maps. The use of accepted conventional signs and symbols in mapping. Preparation of maps from field surveys and timber cruise notes. Prerequisites, Draft-

ing 1 and 2a. Laboratory, *three hours a week. One credit hour.* MR. GIDDINGS

20. Woodlot Forestry.—General principles of forestry as applied to farm woodlands in Maine. Elementary systems of cutting, estimating, protection and planting. Markets for woodlot products. Open to agricultural students, excepting Forestry majors. *Two credit hours.* MR. PLUMMER

43. 44. Special Problems.—Original investigation in advanced forestry work, the subject to be chosen after consultation with the departmental staff. Open to high-ranking juniors and seniors. *Credit, arranged.*

MEMBERS OF THE DEPARTMENTAL STAFF

47. Orientation.—A series of lectures for freshmen in Forestry designed to acquaint them with the fields open to Forestry and Wildlife graduates. *One hour a week. No credit.* MEMBERS OF THE DEPARTMENTAL STAFF

48. Conservation of Our Natural Resources.—History of the conservation movement in the United States. The present situation. Efficient development and wise utilization of minerals, water, forest, land, wildlife. The course is conducted by members of the Forestry, Agronomy, Agricultural Economics and Farm Management, and Civil Engineering Departments, assisted by guest speakers. Open to upperclassmen in the University. *Two credit hours.*

MR. KUTZ AND MEMBERS OF THE UNIVERSITY STAFF

51. Regional Silviculture.—Applied systems of silviculture and management considered in relation to commercially important forest types and timber species in the United States. Prerequisite, Course 8. *Three credit hours.*

MR. BYER

52. Policy and Economics.—Character, extent, distribution, and ownership of the forest resources of the world. History of the development of forest policy. Relation of government, corporations, and individuals to forest resources and forest management. Brief discussion of state and Federal forest legislation. *Four credit hours.* MR. ASHMAN, MR. RANDALL

53. Forest Finance.—The appraisal of values of stands of timber. Determination of returns from forests under management. Damage appraisal. Prerequisite, Courses 5, 6, and 8. *Two credit hours.* MR. RANDALL

55. Forest Management.—Theory of the normal forest; forest organization and regulation for a sustained yield. Calculations for and preparation of a forest management plan based on data collected at summer camp. *Three credit hours.* MR. RANDALL

57. Game Management.—Production of sustained annual crops of wild game. Field studies in game-census work, artificial restocking, and ecological factors controlling game populations. Classroom, *three hours a week;* laboratory, *three hours a week. Four credit hours.* MR. KUTZ

58. Forest Aerial Photography.—Characteristics and uses of aerial photographs with application to forestry. Use of instruments. Basic mathematics involved. Radial line triangulation, measurement of parallax, measurement of tree heights, aerial type mapping, aerial timber cruising. Prerequisites, Courses 5 and 6. Classroom, *one hour a week;* laboratory, *two hours a week. Two credit hours.*

MR. GIDDINGS

101. 102. Forest Mensuration Problems.—*Credit, arranged.* MR. GIDDINGS

103. 104. Forest Management Problems.—*Credit, arranged.* MR. ASHMAN

105. 106. Game Management Problems.—*Credit, arranged.* MR. MENDALL

125. Graduate Thesis.—*Credit, arranged.* MR. ASHMAN, MR. MENDALL

Courses at Forestry Camp

21s. Elements of Woods Practice.—Forestry freshmen. The use and care of woodsmen's hand tools and simple forestry instruments. Pacing. Line work. Map sketching. Required of all freshmen who have not had at least two months of approved experience in the woods. During the summer following the freshman year. *Forty-four hours a week for two weeks. Two credit hours.*

MEMBERS OF THE DEPARTMENTAL STAFF

41s. Practice of Forestry.—Forestry seniors only. Business principles involved in the management of a large tract of forest land. Detailed timber estimates, maps, and the gathering of other data necessary for the preparation of a complete management plan. Trips to woods operations and wood-using industries. *Forty-eight hours a week for eight weeks. Eight credit hours.*

MEMBERS OF THE DEPARTMENTAL STAFF

45s. General Ecology.—The field study of flora and fauna in relation to environment. Field work, *forty-eight hours a week for two weeks. Two credit hours.*

MEMBERS OF THE DEPARTMENTAL STAFF

Course For Two-Year Agriculture

1TY. Forestry.—Establishment and culture of woodlots, especially in Maine. Estimating volumes and computing periodic growth of forest crops. Classroom, *one hour a week;* laboratory, *three hours a week. Two credit hours.* MR. PLUMMER

HOME ECONOMICS

PROFESSORS GREENE AND SWEETMAN; ASSOCIATE PROFESSORS MILES AND STEDMAN; ASSISTANT PROFESSORS MUSGRAVE AND SNYDER; MISS BASOM, MRS. WITHAM, MISS BILLINGS

CURRICULA IN HOME ECONOMICS

The basic curriculum in Home Economics is organized to enable the student to meet the responsibilities of the home maker and citizen at the level consistent with her educational advantages. The sequences, from which she chooses one, constitute vocational or prevocational training for the professions most commonly of interest to Home Economics students. The remainder of the program is elective and may consist of any courses in the University for which the student has prerequisites. Of the total 128 hours, one half must be in subjects other than those essentially technical or professional.

BASIC CURRICULUM IN HOME ECONOMICS

The following is required of all students majoring in the department.

Freshman Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ch	5	Inorganic Chem.	3	2	4	*Bc	4	Organic Chemistry	3	2	4
Eh	1	Freshman Comp.	3	0	3	Eh	2	Freshman Comp.	3	0	3
He	1	Intro. to Home Ec.	3	0	3	*He	2	Cloth. Sel. Prob.	2	2	3
*He	3	Design	1	4	3	*He	14	The Pre-School Child	3	0	3
§My	1	Mod. Society	3	0	3	§My	2	Mod. Society	3	0	3
Pe	1	Phy. Education	0	2	0	Pe	2	Phy. Education	0	2	0
					16						16

* The semester in which starred courses are taken may vary from the arrangement given.
§ May be deferred, these or comparable courses to be taken later.

Sophomore Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
*He	5	Foods	2	4	4	Pe	4	Phy. Education	0	2	0
Pe	3	Phy. Education	0	2	0	Py	2	Gen. Psychology	2	2	3
Py	1	Gen. Psychology	2	2	3	Zo	12	Anat. & Physi.	3	2	4
		Sequence & Elective			9			Sequence & Elective			9
					16						16

Junior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
By	3	Bacteriology	2	0	2	By	10	Fundamentals of Public Health	2	0	2
By	5	Bacteriology	0	2	1	*He	4	The House	2	3	3
		Sequence & Elective			13	He	10	Home Care of the Sick	1	0	1
								Sequence & Elective			10
					16						16

Senior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
*Ag	47	Household Equip.	2	2	3	*He	22	Household Admin.	0	0	3
He	11	Household Mgt.	2	0	2	He	54	Family Ec. Prob.	3	0	3
		Sequence & Elective			11			Sequence & Elective			10
					16						16

SEQUENCES

Home Economics Education. 38-40 hours. This sequence meets the requirements of certification for teaching vocational or general home economics and certain selected science courses in junior or senior high schools. A summer project, Pj 2 or Pj 4 for credit, or a non-credit project, is required. He 17 (18) is recommended.

Ed	3	He 55 (56)	3	He 73, 74	6
He 6	4	He 57a	1	He 78	2
He 7, 8 (8a)	4	He 57 (58b)	1	He 81a	3
He 45 (46)	2	He 63 (64)	2	Sh 1 (2)	2
He 49 (50)	2	He 65 (66)	2	Sy 3	3

Extension Teaching. 29-31 hours. This sequence prepares the student for work as a home demonstration agent or 4-H Club agent. Further work in institutional foods, clothing, journalism and the social sciences is recommended. Students often combine this sequence with Home Economics Education.

Eh 19	2	He 57a	1	Sh 1 (2)	2
He 6	4	He 58b	1	Sy 3	3
He 7, 8 (8a)	2-4	He 63 (64)	2	Sy 24	3
He 45 (46)	2	He 65 (66)	2		
He 49 (50)	2	He 81a (82a)	3		

Foods and Nutrition. 25 hours. This sequence is for students preparing for positions as hospital dietitians, nutritionists, institutional foods managers, research assistants in foods or nutrition, or home economists in commercial food fields. The courses listed below are those required for membership in the American Dietetics Association, and should be supplemented by courses in economics and business administration. For students not interested in these qualifications, substitutions appropriate to their vocational interests may be made for all except the starred courses.

*Bc 53	3	*He 6	4
*Bc 9 or 60	3	*He 63	2
Ed	3	*He 65	2
		He 67	2
		He 59j, 81a, 81b, 83, 87	6 hours selected

Textiles, Clothing and Merchandising. 28 hours. For students interested in various aspects of clothing and decoration. The approach to these fields is either through merchandising as a business, or through art applied in costume design or decoration. Preparation should be varied accordingly. Starred courses listed below are required of all students in this sequence, but appropriate substitutions may be made for others. These will be largely in art, French, history, and theatre if the student's interest is in design and fashion; from psychology, speech and journalism, if it is radio, advertising or feature writing; from economics and business administration, if it is in merchandising.

*He 7, 8 (8a)	Clothing Construction	2-4	He 52	Draping	2
He 17 (18)	Applied Design	2	He 61	History of Costume	2
He 43 (44)	House Furnishing	3	He 91, 92	Costume Design	6
*He 45 (46)	Advanced Clothing Construction	2		Economics or History	6
*He 51	Clothing Economics	1			

Child Development. 26-28 hours. This sequence is for students interested in prevocational training in fields such as nursery school, parent education, child welfare and group work. Electives in public speaking, in the appreciation of art and music, genetics, and additional English and education are also recommended. Arrangements are made for two students each year to do one semester of work in this field at the Merrill-Palmer School, Detroit, Michigan. The work will be accepted as applying on basic and sequence requirements.

He 57 (58c)	2	He 69	3
He 59 (60c)	2-4	He 70	3
He 63 (64)	2	Appropriate psychology and sociology	
He 65	2	courses—15 hours	

General Home Economics and Special Sequences. 22 hours. For students who are interested in the general education and homemaking aspects of the home economics curriculum, but are not attempting to qualify for any of the recognized home economics professions, individualized sequences are available. These will consist either of selected advanced home economics courses, constituting a general home economics sequence, or of a concentration of non-home economics courses related to some central interest of the student, vocational or non-vocational.

Courses in Home Economics

1. Introduction to Home Economics.—The problems of adjustment to college life and a survey of the professional fields open to Home Economics trained women. *Three credit hours.* MISS GREENE, MISS MILES

2. Clothing Selection Problems.—Factors involved in selection of clothing in good taste. Economic aspects including budgets and study of fabric and fibers. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MISS STEDMAN, MRS WITHAM

3. Design.—A study of the principles of design and color and their application to various problems in everyday life. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MISS MUSGRAVE

4. The House.—Selecting and furnishing the house in accordance with family needs and resources. Problems based on existing house conditions and a study of the effect of changing social, economic, and material factors. Prerequisites, Courses 3 and 14. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MISS BASOM

5 (5a). Foods.—Selecting and preparing foods for family meals with emphasis on nutritive quality, palatability, digestibility, sanitary quality and economy. Laboratory—buying and preparing foods, planning and serving simple family meals. Prerequisite, one semester of chemistry (Chemistry 5 or equivalent). Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MRS. SWEETMAN, MRS. SNYDER

6 (6a). Advanced Foods.—A continuation of Course 5 with more emphasis on the experimental approach and study of research findings. Prerequisites, Course 5 or equivalent, and one year of chemistry (Chemistry 5 and Biochemistry 4 or equivalent). Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MRS. SWEETMAN, MRS. SNYDER

7; 8. Clothing Construction Problems.—The techniques of garment construction. The use of the sewing machine, commercial patterns, selection of materials, fitting and finishes are included. Prerequisite, Course 2 or 3. Laboratory, *four hours a week. Two credit hours.* MRS. WITHAM

8a. Clothing Construction Problems.—Covers in one semester the material in Course 7; 8. For students who have had adequate previous training in this field. Admission by arrangement only. Laboratory, *four hours a week. Two credit hours.* MRS. WITHAM

10. Home Care of the Sick.—The principles and practices of care of the sick. Recognizing common symptoms of departure from normal health, giving

routine home care in minor illnesses, and carrying out intelligently the directions of a physician. Prerequisite, Bacteriology 3. *One credit hour.*

11. Household Management.—Homemaking as a profession. Standards and objectives in the provision of health, contentment, and development of family members. Techniques of management of time and energy to contribute to securing the values of family life. *Two credit hours.* MISS BASOM

14. The Pre-School Child.—Children's development and factors affecting it. Laboratory includes observation and participation in nursery school. Classroom and laboratory, *arranged. Three credit hours.* MISS MILES

17 (18). Applied Design.—Application of design principles to problems in textiles, including block printing, batik, decorative needlework, and hand weaving. Prerequisite, Course 3. Laboratory, *four hours a week. Two credit hours.* MISS MUSGRAVE

21 (22). Household Administration.—Students plan and carry out the activities of the home management house, including care of a young child. Emphasis on managerial ability and the attitudes essential to satisfactory group living. Seniors, or juniors by permission. *Three credit hours.* MISS BASOM

23 (24). Family Meals.—Selecting and preparing foods with emphasis on nutritional adequacy, moderate cost, and scientific methods of preparation. Only for Arts and Sciences students above freshman rank. Classroom, *two hours a week;* laboratory, *four hours a week.* (Given one term only.) *Four credit hours.* MRS. SWEETMAN, MRS. SNYDER

26. The Child in the Home.—For Arts and Sciences students. Corresponds in part to Course 14. Laboratory includes experience in the nursery school. Classroom and laboratory, *arranged. Three credit hours.* MISS MILES

43 (44). House Furnishing.—House furnishing as an art. Problems in choice and arrangement of furniture and materials to satisfy aesthetic and functional requirements. Given in the spring of 1948. Prerequisites, Courses 3 and 4, or permission. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* MISS MUSGRAVE

45 (46). Advanced Clothing Construction.—Laboratory problems in the selection and construction of tailored coats and suits, and children's clothing. Laboratory, *four hours a week. Two credit hours.* MRS. WITHAM

49 (50). Clothing Patterns.—Use of the commercial pattern for making the individual foundation pattern. Problems in designing and changing of designs with use of the pattern, its aid in fitting problems, and use in construction of garments. Laboratory, *four hours a week. Two credit hours.* MISS MUSGRAVE

51. Clothing Economics.—Fashion, retailing and standards of clothing. *One credit hour.* MISS MUSGRAVE

52. Draping.‡—By means of draping fabric, opportunity is afforded for working out problems in color, design, and texture in formal and informal dresses. Prerequisite or parallel, Course 51. Laboratory, *four hours a week. Two credit hours.* MISS MUSGRAVE

53 (54). Family Economic Problems.—Family cash and real income as related to American standards of living. Household budgets. Consumer buyer problems. *Three credit hours.* MISS GREENE

55 (56). Home Economics Education.—The teaching of home economics in junior and senior high schools. A study of setting up objectives in relation to student and community needs and the selection of effective teaching procedures,

as illustrated in texts, courses of study, and current literature. *Three credit hours.*
MISS STEDMAN

57a. Food Preservation.—The principles and recommended practices for household food preservation with emphasis on canning and freezing. Prerequisite, Course 5 and parallel Bacteriology 3 and 5. Laboratory, *two hours a week. One credit hour.*

57b (58b). Demonstrations.—The planning and giving of demonstrations illustrating recommended practices for the home. Open to seniors and to juniors by special permission. *One credit hour.* MISS BASOM

57c (58c). Nursery School Meals.—The planning, preparing and serving of meals for the nursery school. Prerequisite, Course 65. *Two credit hours.*
MISS BASOM

59 (60 a-j). Special Problems.—Problems in the various fields of home economics, to enable students to extend their knowledge or judgment, or to develop techniques according to individual needs. Subdivisions as follows: a, nutrition; b, foods; c, clothing and textiles; d, design; e, history of costume; f, house planning and decoration; g, child development; h, household management; i, home economics education; j, institutional management. *One to six credit hours.*
MEMBERS OF THE DEPARTMENTAL STAFF

61. History of Costume.—The development of costume of men and women from the people of antiquity, through various periods of European history to the present time. Lectures, reading, and collection of illustrations. *Two credit hours.*
MISS MUSGRAVE

63 (64). Nutrition.—Principles of normal nutrition at all ages. Prerequisite, Biochemistry 4 or equivalent. *Two credit hours.* MRS. SWEETMAN

65 (66). Dietetics.—Calculation and preparation of dietaries for individuals of all ages. Laboratory, *four hours a week. Two credit hours.* MRS. SNYDER

67 (68). Nutrition in Abnormal Conditions.—The principles involved in adjusting diets in such diseases or other abnormal conditions as are benefited by varations from normal diets. Prerequisite, Course 63. *Two credit hours.*
MRS. SWEETMAN

69. The Child and His Family.—Introduction to the study of family living with emphasis on the importance of the family as a factor in shaping the growth and development of children and adolescents. Prerequisite, Course 14 or 26. *Three credit hours.* MISS MILES

70. Using Creative Arts With Young Children.—Consideration of literature, art, music, and play materials for pre-school children, and their function in the development of the child. Experiences in conducting the music and story period in the nursery school. Prerequisite, Course 14 or 26. *Three credit hours.*
MISS MILES

73a, 74b. Supervised Field Teaching.—Observation, participation, and teaching each term in a selected junior or senior high school in the state, under the immediate direction of the local teacher. *Three credit hours each.* MISS STEDMAN

78. Advanced Home Economics Methods.—Detailed development of selected units of work related to field teaching. Study of the home project, selection and use of illustrative material, classroom management, and equipment. *Two credit hours.* MISS STEDMAN

81a (82a). Institutional Foods.—Group feeding, including menu making, food buying, use of heavy duty equipment, and special problems of school lunch.

The laboratory consists of quantity cookery for a faculty dining room. Prerequisite, Courses 5 and 6. Classroom, *one hour a week;* laboratory, *six hours a week. Three credit hours.* MISS BILLINGS

81b (82b). Institutional Foods.—Continuation of quantity cookery laboratory, with emphasis on standardizing recipes and merchandizing food. Prerequisite, Course 81a or 82a. Laboratory, *six hours. Two credits.* MISS BILLINGS

83 (84). Food Service Management.—Problems of organization, management, equipment, and cost control of food service units in schools, residence halls, and hospitals. Field trips. Prerequisites, Course 81a (82b), 81b (82b). *Three credit hours.* MISS BILLINGS

87 (88). Institutional Foods Management Laboratory.—Observation and participation in managerial responsibilities in tea room. Prerequisites, Courses 81a (82b), 81b (82b). Laboratory, *three to nine hours. One to three credit hours.* MISS BILLINGS

91. Costume Design.‡—Problems in dress design for various persons and occasions. Designing chiefly in pencil and water color. Prerequisite, Course 3. Laboratory, *six hours a week. Three credit hours.* MISS MUSGRAVE

92. Costume Design.—Advanced dress design problems using a variety of mediums including paper, paint, and fabric. Laboratory, *six hours a week. Three credit hours.* MISS MUSGRAVE

101 (102). Advanced Nutrition.—Methods of research in nutrition and recent advances in the field. Prerequisite, Course 63. Offered if sufficient demand. *Two or three credits as arranged.* MRS. SWEETMAN

103 (104). Food Economics.—The relation of the quality of nutrition to family incomes, household production programs, food prices, and consumer-buying skills. Social and economic factors involved in improving nutritional status. Prerequisites, Courses 63 and 65, or permission of the instructor. *Two credit hours.* MRS. SWEETMAN

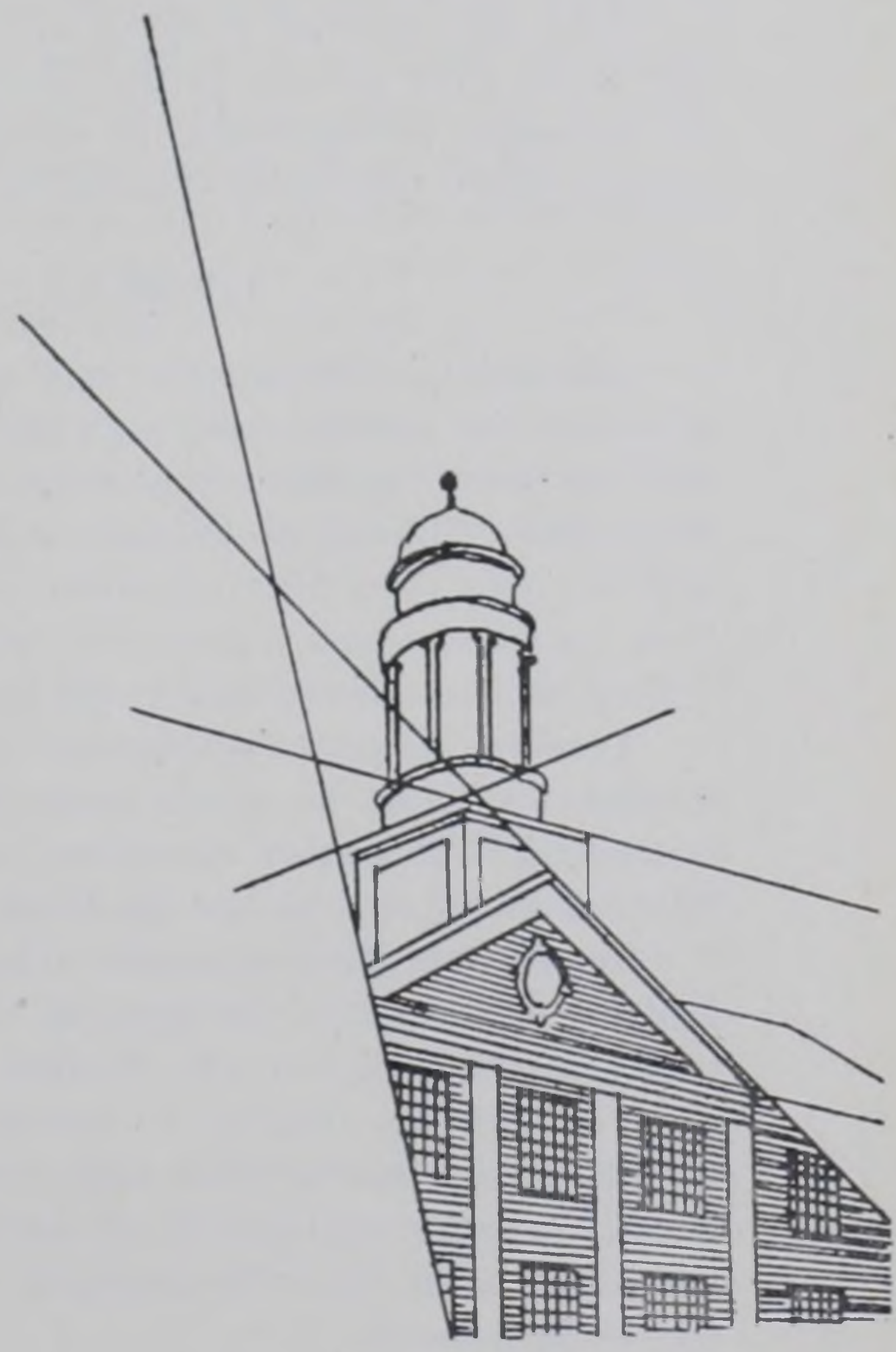
125. Graduate Thesis.—In Home Economics or Home Economics Education. *Credit arranged.*

MISS GREENE, MRS. SWEETMAN, MISS STEDMAN, MISS MILES

ALL DEPARTMENTS

Summer Projects.—A student in the College of Agriculture desiring to carry out a field project during the summer recess under faculty direction may obtain credit for such work, providing proper arrangement is made with the major department concerned and the project is successfully carried through to completion. Project work may be conducted during any summer recess between the freshman and senior years. Freshman-Sophomore Project is designated Pj 1, and Sophomore-Junior Project is designated Pj 2, each limited to 1 credit. Junior-Senior Project is designated Pj 4 and may be 1, 2, or 3 credits. Complete details concerning project work may be obtained from heads of departments in which major curricula are offered.

COLLEGE OF ARTS & SCIENCES



JOSEPH M. MURRAY, DEAN

College of Arts and Sciences

The College of Arts and Sciences endeavors to furnish opportunities for students to acquire knowledge and skill in a variety of fields wherein a cultural emphasis is prominent.

For purposes of administration, the College is divided into twelve departments. All students are required to take work in several of these departments, but in general the degree of specialization can vary widely to fit the needs of individuals. Thus some may desire to pursue studies in only a few of the major departments while others may prefer to take work of greater subject matter range. The College has prepared, for those who desire them, specific programs of study in many pre-professional and vocational fields (see the section on Specimen Curricula). Considerable flexibility is permitted the student within all these programs.

The College has as a major objective the desire to furnish its students with a general cultural background. Within the framework of this background the student will also find much that is of utilitarian value. The College seeks to train men and women in critical intelligence, broad and sympathetic understanding of human needs and determination of purpose.

Arts and Sciences students who are interested in taking subjects offered in one of the other colleges of the University may do so provided they have fulfilled the necessary prerequisites. In collaboration with the School of Education, this College offers specialized training to prospective teachers.

GENERAL INFORMATION

Admission. The specific requirements for admission are given in full elsewhere in the catalog (see page 52). All deficiencies in entrance requirements must be made up before registering for the junior year. Students who transfer from other colleges with advanced standing must satisfy all admission requirements within a year. Graduates of Maine normal schools who rank in the upper half of their class and whose high-school records satisfy the entrance requirements of the College will be allowed half credit for courses completed at the normal school.

Transfer Credit. No transfer credit will be allowed for courses taken at another institution in which grades below C have been received. Evaluation of courses taken at another institution for which transfer credit is asked rests with the Director of Admissions and the Dean.

Graduation Requirements. The work of the College of Arts and Sciences leads to the degree of Bachelor of Arts (B.A.). Men students not excused from taking Military Science are required to complete 135 semester credit hours;* all other students are required to complete 128 hours.

In addition, each student must accumulate a total of "grade points" equal to the number of hours required for graduation. Grade points are computed by multiplying each hour of the letter grade by a factor as follows: A by 3, B by 2, C by 1, and D, E, F, by 0.

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* The term "credit hours" in the present catalog refers to credit earned for study during a semester. One of these credit hours is equivalent to three-halves of one obtained for a twelve-week term's work. Thus a student who has already acquired a number of term credit hours may find the equivalent number of semester hours by multiplying by two-thirds.

Students entering as freshmen prior to September, 1946, are not required to fulfill the above rule; they must, however, accumulate a total of at least 95 semester credit hours with a C (or better) grade. In general such students should consult previous catalogs for degree requirements.

Specific course requirements are listed in the following section, "The First Two Years."

The passing of a comprehensive examination is a requirement for the degree in certain departments.

Satisfactory work in written English is required throughout the College course.

Students who transfer to this College from another college of the University will be required to do two full years' work in the College of Arts and Sciences and satisfy all specific requirements before receiving the Bachelor of Arts degree, with the exception that students from the College of Technology may transfer after the junior year and be graduated after one year's work as majors in the Departments of Physics, Chemistry, or Mathematics; and students from the College of Agriculture may similarly transfer and be graduated as majors in the Department of Zoology.

The First Two Years. The first two years of the student's college course constitute a unified period during which he studies, for the most part, basic courses in varied fields. The objective of these years is twofold: first, to enable the student to acquire knowledge over an extended area, and second, to prepare him to undertake studies of a distinctly advanced nature in some major subject or field.

In order to meet these objectives, the College has established specific course requirements for the first two years. With the consent of the adviser and the Dean, one but not more than two of these requirements may be postponed until the junior year by any student whose interests are best served by variation from the usual program. Also the student may be able to satisfy certain of these requirements by passing qualifying tests. These tests are ordinarily given during Freshman Week and permission of the department concerned must be obtained by the student before he attempts the test.

The course requirements follow:

I. ENGLISH and SPEECH. All freshmen are required to complete one year of a three-hour course in English and a one-hour course in Speech.

II. FOREIGN LANGUAGE. All students are to complete a qualifying course in Greek, Latin, French, Spanish, or German, or to pass a qualifying test in one of these languages. Ordinarily the qualifying course may be taken in the freshman year by those students who continue a language taken for at least three years in high school. Students who begin a language in college would normally take the qualifying course in the sophomore year.

III. SOCIAL SCIENCE.

a. Freshman Year: Students who have not completed a basic one-year high-school course in American History are required to take United States History. Students who have completed such a course in high school elect a basic year course in United States History, History of Western Europe, or Modern Society.

b. Sophomore Year: Students are to select a basic year course from the following: Economics, Government, Psychology and Sociology. United States History and History of Western Europe belong to this group of electives for those students who have taken Modern Society in the freshman year.

IV. NATURAL SCIENCE AND MATHEMATICS.

a. Freshman Year: Students are to select a basic year course from one of the following: Astronomy, Chemistry, Geology, Mathematics, Physics, Zoology, and Zoology-Botany. This requirement may also be fulfilled by two one-semester descriptive courses in Astronomy, Geology, or Physics. Not more than two of the one-semester descriptive courses may be taken in fulfillment of the two-year requirement in Natural Science and Mathematics.

b. Sophomore Year: Students are to select a basic one-year course from the above list but other than the one selected for the freshman year.

V. HUMANITIES. Sophomore students are to select a basic year course from one of the following: Ancient Civilization, Philosophy and Modern Life, and Masterpieces of English and American Literature.

VI. Women students are to take Physical Education during both the freshman and sophomore years; also, they are to take Healthful Living in the first semester of the freshman year. Healthful Living and one year of Physical Education are required of transfer students who are admitted as sophomores.

VII. Men are required to take two years of Military Science and Physical Education.

For those students taking Military Science the maximum registration is seventeen credit hours *exclusive* of this subject; for others, the maximum registration is seventeen hours. The minimum is fourteen hours. Normally not more than six hours may be taken in one subject in either semester of the sophomore year.

During the first two years a student must show evidence of ability to pursue advanced courses successfully. Work of C grade or above will be interpreted as satisfactory. *Students with records consistently below this standard will be advised to withdraw from the University at the end of their sophomore year.*

Throughout the freshman and sophomore years, the student is under the general supervision of the Dean of the College. The Dean is assisted by faculty advisers whose purpose is to give each student individual guidance in selection of courses and advice concerning problems of personal adjustment.

The Last Two Years. On the completion of about one half of the hours required for graduation, the student, in conference with his adviser and with the approval of the Dean, selects his major subject. The department in which the major subject chiefly falls becomes for administrative purposes the student's major department, and the head of that department is his major instructor. The latter is responsible for the student before the faculty and must approve the student's registration.

The major curriculum is the nucleus of related courses selected by the student as representing his chief field of interest or major subject. Normally much of the work will fall in one department. The minimum number of credit hours which will be acceptable for a major is set by the department. The maximum number of hours which a student may count for degree credit from any one department is forty-eight. In general, it is assumed that upperclass students will take courses of an advanced nature.

Selected students may take advanced courses in Infantry during their junior and senior years. Six credit hours for the degree of Bachelor of Arts are granted for two years of advanced Military.

Comprehensive Examinations. Most departments in the College require comprehensive examinations of their senior major students. Certain departments

also give basic or preparatory comprehensives in the spring semester of the junior year. The purpose of the comprehensive examination is to provide the student with an opportunity to demonstrate his knowledge of the salient features of his general field of study. It aims to make clear the unity of the field as a whole. It is, therefore, designed in such a way as to develop perspective and to encourage organization of materials as well as accuracy and range of knowledge. The student is thus able to evaluate his ability in the field of his major interest and to make a smooth transition to his professional and graduate work.

Honors Program. A program of Honors Work for the benefit of the superior student is offered by the College of Arts and Sciences. Its purposes are to encourage exceptional ability by affording opportunities for its exercise and to reward high achievement with appropriate distinction. The opportunities are intended especially to stimulate originality, intellectual curiosity, and resourcefulness, and they require a large measure of self-reliance. The student does his work under the supervision of a tutor, whom he meets in conference at regular intervals for informal discussion and advice. The rewarding distinction, which is the highest offered in the College of Arts and Sciences, is conferred following a successful completion of the Honors program, in the form of graduation Honors, which are of three grades: Honors, High Honors, Highest Honors.

Professional Certificates for Teachers. The Professional Secondary Certificate is granted for a period of two years to graduates of the College who have completed not less than eighteen credit hours in education, not more than six of which may be in the field of psychology. The courses taken to satisfy this requirement should be completed with a grade of C or better.

In addition to completing a major subject, candidates for the Certificate are expected to complete at least one minor teaching subject. The amount of work necessary to complete a minor is determined by the department concerned.

Among the combinations of major and minor subjects often expected of prospective teachers are mathematics and science, French and Latin, English and history, English and French, history and Latin, English and Latin, and French and history.

Five Year Curriculum in Liberal Arts and Nursing. In cooperation with the Central Maine General Hospital, Lewiston, the Eastern Maine General Hospital, Bangor, and the Maine General Hospital, Portland, a combined course is offered which leads to the degree of Bachelor of Arts and the diploma in Nursing. Students electing this program attend the University during the first, second, and fifth years, and the School of Nursing during the intervening summers as well as the third and fourth years (see page 112).

Medical Technology. This course has been developed in cooperation with the Eastern Maine General Hospital, Bangor, and the Central Maine General Hospital, Lewiston. Students electing the program spend three or more years at the University of Maine following which they undergo a period of twelve to eighteen months in training at one of the above hospitals. Students receive the degree of Bachelor of Arts upon satisfactory completion of the program (see page 111) and the certificate in Medical Technology upon passage of a special examination. The work at the University also meets the entrance requirements of schools of medical technology which are not affiliated with the University.

Public Management Curricula. These programs are designed to train men and women for governmental service in town, city, state, and federal agencies; some are arranged especially for Arts and Sciences students.

Bangor Theological Seminary. Students in the College of Arts and Sciences have the privilege of registering for courses in Bangor Theological Seminary not to exceed five credit hours per semester, without payment of tuition charges, and a like privilege is extended by the College to students in the Seminary. The courses for which students may register must be approved by the Dean of the College, the President of the Seminary, and the instructor in the subjects concerned in both institutions.

Seminary students who are admitted to advanced standing at the University will not be allowed duplicate credit for work already done at the University.

Students who have completed the junior college curriculum of the Seminary and who, on that basis, wish to be admitted to advanced standing in the College of Arts and Sciences should plan to select a major for which their previous Seminary work offers a reasonable preparation. While at the Seminary, so far as possible, they should endeavor to complete all subject requirements of the College, especially that in foreign language.

Summer Session. Before students of the College of Arts and Sciences pursue Summer Session courses in any institution other than the University, they must secure the approval of the Dean in writing, if they expect degree credit for such work. A marked bulletin of the institution should be left at the Dean's Office with a note requesting such credit for the selected courses.

Marine Laboratory at Lamoine. The University, through the Zoology Department, has facilities for a summer course in marine invertebrate zoology at the Lamoine laboratory on Frenchman's Bay. The program offers credit for both graduate and undergraduate work.

SPECIMEN CURRICULA

Pre-professional, vocational, and departmental curricula are available and may be obtained from the Director of Admissions on request. These curricula will provide the student with a general idea of the character of preparation recommended. All possible latitude is allowed in order to permit development of the student's own interests and aptitudes. A few representative curricula follow:

SPECIMEN CURRICULUM FOR FOREIGN SERVICE

Leading to

Degree of A.B. in History and Government (Foreign Service Option)

Freshman Year			Sophomore Year		
Eh	1; 2	Freshman Composition	Es	1	Principles of Economics
Fr		French	Es	5	Comparative Econ. Systems
Hy	5. 6	History of Western Europe	Fr		French
Ms		Mathematics	Gm or Sp		German or Spanish
Mt	1. 2	Military Training	Gt	1. 2	Introduction to Government
Pe	1. 2	Physical Education	Hy	59. 60	Economic History of the U. S.
Sh	1	Public Speaking	Mt	3. 4	Military Training
Sh	3	Debate	Pe	3. 4	Physical Education

Junior Year

Ba	55. 57	Business Law or Es 71, Public Finance and Es 64, International Trade
Fr		French
Gm or Sp		German or Spanish
Gt	51. 52	Public Administration
Gt	73. 74	International Relations
Hy	83. 84	The Far East

Senior Year

Fr		French
Gm or Sp		German or Spanish
Gt	83; 84	American Constitution
Hy	53	Europe from 1870
Hy	54	Contemporary Europe
Hy	67. 68	American Diplomatic History
Ms	19 (20)	Statistics, or Ba 51, Corporation Finance

SPECIMEN CURRICULUM IN PUBLIC MANAGEMENT

Leading to

Degree of A.B. in Public Management (State and Federal Administration Option)

Freshman Year

Eh	1; 2	Freshman Composition
Hy	3. 4	United States History
		*Foreign Language
Ms		Mathematics
Mt	1. 2	Military Training
Pe	1. 2	Physical Education
Sh	1	Public Speaking
Sh	3	Debate

Sophomore Year

Ba	9 (10)	Accounting
Eh	7. 8	Second-Year Composition
Es	1	Principles of Economics
Es	5	Comparative Econ. Systems
Gt	31. 32	American Government
Mt	3. 4	Military Training
Pe	3. 4	Physical Education
Sy	1	Principles of Sociology
Sy	2	Social Problems

Junior Year

Eh	3. 4	History of English Literature
Gt	9	National Planning
Gt	73. 74	International Relations
Hy	17. 18	History of England
Ms	19 (20)	Statistics
Py	1; 2	General Psychology

Senior Year

Ba	60	Personnel Management
Es	71	Public Finance
Gt	51. 52	Public Administration
Gt	83; 84	American Constitution
Gt	98	Public Opinion
Gt	99. 100	Political and Social Thought
Py	75	Social Psychology

* To be continued until the student has completed his language requirement.

SPECIMEN CURRICULUM IN PUBLIC MANAGEMENT

Leading to

Degree of A.B. in Public Management (City and Town Manager Option)

Freshman Year

Eh	1; 2	Freshman Composition and Speech
Md	1	Fundamentals of Drafting
Md	2	Elementary Machine Drafting
Ms	1	Trigonometry
Ms	3	College Algebra
Ms	4	Analytic Geometry and Calculus
Mt	1. 2	Military Training
Pe	1. 2	Physical Education
		Social Science
		Foreign Language

Sophomore Year

Ba	9 (10)	Accounting
Ce	1	Surveying
Ce	10	Curves and Earthwork
Ch	1; 2	General Chemistry
Gt	31. 32	American Government
*Ms	19 (20)	Statistics
Mt	3. 4	Military Training
Pe	3. 4	Physical Education

Junior Year

Ba	60	Personnel Management
By	1. 3	Bacteriology
Ce	29	Highway Construction
Ce	33	Sanitary Engineering and Water Supply
Eh	15. 16	Masterpieces of English and American Literature
Es	71	Public Finance
Gt	33. 34	Municipal Government and Municipal Administration
Gt	98	Public Opinion

Senior Year

Ce	71. 74	Sanitary Engineering
Gt	51. 52	Public Administration
Gt	95. 96	Government Seminar
		Electives

* Postpone to senior year if necessary to take foreign language two years.

SPECIMEN MAJOR CURRICULUM FOR PRE-PROFESSIONAL PREPARATION FOR SOCIAL SERVICE WORK

Freshman Year

Eh	1; 2	Freshman Composition
My	1; 2	Modern Society
Pe	1. 2	Physical Education
Pe	21	Healthful Living (Women)
Sh	1	Public Speaking
Zo	3; 4	Animal Biology
		Foreign Language

Sophomore Year

Es	5 (6)	Comparative Econ. Systems, or other social science
Ms	19 (20)	Statistics
Pe	3. 4	Physical Education
Pl	1. 2	Philosophy and Modern Life, or elective in Humanities
Py	1; 2	General Psychology
Sy	3	Social Problems
Sy	24	Rural Sociology, or Sy 26, Urban Sociology
		Mathematics or Science

Junior Year

Es	33	Labor Problems, or Hy 59. 60, Economic History of the U. S., or Hy 69. 70, Social History of the U. S., or a course in Government
Py	71	Abnormal Psychology
Py	72	Mental Hygiene
Py	75	Social Psychology
Sy	11	Social Anthropology
Sy	51	Field of Social Work
Sy	52	Child Welfare, or Sy 56, The Juvenile Delinquent
Sy	66	Public Welfare, or Sy 63, Criminology, or another elective in Sociology

Senior Year

Py	77	Psychology of Personality, or other elective in Psychology
Sy	57	Group Work Leadership
Sy	71	Principles of Case Work
Sy	72	Field Practice in Social Work, or Sy 59, Marriage and the Family
Sy	96	Sociological Theory
		Electives, including alternatives listed under junior year

Note: This curriculum is suggestive only and should not be considered a required program of courses.

SPECIMEN MAJOR CURRICULUM IN PRE-LEGAL STUDIES

Freshman Year

Eh	1; 2	Freshman Composition
Hy	3. 4	United States History
Mt	1. 2	Military Training
My	1; 2	Modern Society
Pe	1. 2	Physical Education
		Foreign Language
		Science or Mathematics
		Speech

Sophomore Year

Ba	9 (10)	Accounting
Gt	33. 34	Municipal Government
Hy	17. 18	English History
Ms	19 (20)	Statistics
Mt	3. 4	Military Training
Pe	3. 4	Physical Education
Py	1; 2	General Psychology
		Science or Mathematics
		Humanities Elective

Junior Year

Eh	3. 4	History of English Literature
		or
Eh	7. 8	Second Year Composition
Es	33	Labor Problems
Es	74	Labor Legislation
Gt	51. 52	Public Administration
Sh	4	Debate
		Elective

Senior Year

Ba	51	Corporation Finance
		or
Ba	59	Business Management & Policy
Ba	54	Investments
		or
Ba	60 (61)	Personnel Management
Ba	55. 58	Business Law
Es	53	Money and Banking
		or
Es	71	Public Finance
Gt	73. 74	International Relations
Gt	83; 84	American Constitution
Gt	99. 100	Political and Social Thought

Note: This specimen curriculum is suggestive only, not rigid. It is not intended to represent the requirements of any particular law school.

SPECIMEN MAJOR CURRICULUM IN BUSINESS ADMINISTRATION

Freshman Year

Eh	1; 2	Freshman Composition
Hy	5. 6	European History
Mt	1. 2	Military Training
My	1; 2	Modern Society
Pe	1. 2	Physical Education
		Foreign Language
		Mathematics or Science

Sophomore Year

Ba	9 (10)	Accounting
Eh	15. 16	Masterpieces of English and American Literature, or Pl 1. 2, Philosophy and Modern Life
Es	1	Principles of Economics
Es	6	Comparative Economic Systems
Ms	19 (20)	Statistics
Mt	3. 4	Military Training
Pe	3. 4	Physical Education
Py	1; 2	General Psychology

Junior Year

Ba	51	Corporation Finance
Ba	54	Investments
Ba	61	Personnel Management, or Es 53, Money and Banking
Es	33	Labor Problems
Es	62	Business Cycles
Hy	59. 60	Economic History of the U. S.
Ms	17; 18	Math. Theory of Investments, Art, Music, Theater, or Philosophy

Senior Year

Ba	55; 58	Business Law
Ba	63; 64	Marketing
Es	71	Public Finance, or Es 53, Money and Banking
Es	76	Public Utilities
Gt	51	Public Administration
Py	12	Advertising and Selling, or Ce 12, Economic Geography
		Elective in Philosophy

Note: This curriculum is suggestive only and not to be construed as a program of required courses in Business Administration.

SPECIMEN MAJOR CURRICULUM FOR PREMEDICAL STUDIES

Freshman Year

FALL SEMESTER			Hours	SPRING SEMESTER			Hours
Eh	1	Freshman Composition	3	Eh	2	Freshman Composition	3
*Gm	1	Elementary German	4	Gm	2	Elementary German	4
Mt	1	Military Training	1½	Mt	2	Military Training	1½
Pe	1	Physical Education	0	Pe	2	Physical Education	0
Sh	1	Speech	2	Zo	4	Animal Biology	4
†Zo	3	Animal Biology	4			Social Science	3
		Social Science	3			‡Elective	2-3
			17½				17½-18½

* The equivalent of two years of collegiate modern foreign language, preferably German, is usually required for medical school admission. Candidates should be familiar with the specific requirements of several schools before planning their first-year program.

† Candidates who have a special interest in Chemistry should take General Chemistry during the Freshman year, with or without Animal Biology.

Sophomore Year

			Hours				Hours
Ch	1	General Chemistry	4	Ch	2	General Chemistry	4
Eh	15	Masterpieces of Literature	3	Eh	16	Masterpieces of Literature	3
Gm	3	Intermediate German	3	Gm	16	Scientific German	3
Mt	3	Military Training	2	Mt	4	Military Training	2
Pe	3	Physical Education	0	Pe	4	Physical Education	0
Py	1	General Psychology	3	Py	2	General Psychology	3
Zo	15	Comparative Anatomy	4	Zo	18	Embryology	4
			19				19

Junior Year

			Hours				Hours
Ch	51	Organic Chemistry	5	Ch	52	Organic Chemistry	5
Ps	1a	General Physics	4	Ps	2a	General Physics	4
Zo	41	Histology	4			‡Electives	7
		‡Elective	3				
			16				16

Senior Year

			Hours				Hours
Bt	45	Genetics	3	Ch	40	Quantitative Analysis	4
Zo	37	General Physiology	4	Zo	38	General Physiology	4
Zo	55	Seminar	1	Zo	56	Seminar	1
		‡Electives	8			‡Electives	8
			16				17

‡ Recommended electives are Mathematics, Philosophy, Sociology, Bacteriology, Literature and Chemistry.

CURRICULUM FOR PREDENTAL STUDIES

The predental curriculum consists of selected portions of the above premedical program.

SPECIMEN MAJOR CURRICULUM FOR MEDICAL TECHNOLOGY

Freshman Year

FALL SEMESTER			Hours
Ch	1	General Chemistry	4
Eh	1	Freshman Composition	3
Pe	1	Physical Education	0
Pe	21	Healthful Living	2
Zo	3	Animal Biology	4
		Modern Language	3-4
			16-17

SPRING SEMESTER			Hours
Ch	2	General Chemistry	4
Eh	2	Freshman Composition	3
Pe	2	Physical Education	0
Sh	2	Speech	2
Zo	4	Animal Biology	4
		Modern Language	3-4
			16-17

Sophomore Year

			Hours
Pe	3	Physical Education	0
Py	1	General Psychology	3
Ps	3	Descriptive Physics	3
Zo	41	Histology	4
		Social Science	3
		Modern Language or elective	3
			16

			Hours
Ch	40	Quantitative Analysis	4
Pe	4	Physical Education	0
Py	2	General Psychology	3
Zo	22	Parasitology	4
		Social Science	3
		Modern Language or elective	3
			17

Junior Year

			Hours
By	1-3	Bacteriology	5
Ch	51	Organic Chemistry	5
Eh	15	Masterpieces of Literature	3
		Elective	3
			16

			Hours
By	52	Bacteriology	4
Ch	52	Organic Chemistry	5
Eh	16	Masterpieces of Literature	3
		Elective	3
			15

*Senior Year

Eighteen months in the Stodder Laboratory, Eastern Maine General Hospital, or after one more semester at the University, twelve months in the School for Medical Technologists, Central Maine General Hospital.

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* Students desiring to spend their senior year at the University of Maine may do so by electing the proper advanced courses. Such students will be candidates for the B.A. degree but are not eligible for the certificate of M.T. until they complete their hospital training.

CURRICULUM IN LIBERAL ARTS AND NURSING

First Year

FALL SEMESTER			Hours	SPRING SEMESTER			Hours
Ch	5	Inorganic Chemistry	4	Bc	4	Organic Chemistry	4
Eh	1	Freshman Composition	3	Eh	2	Freshman Composition	3
Pe	1	Physical Education	0	Pe	2	Physical Education	0
Pe	21	Healthful Living	2	Sh	2	Public Speaking	2
Zo	3	Animal Biology	4	Zo	12a	Anatomy and Physiology	5
		Language	3-4			Language	3-4
			15-16				17-18

Eight weeks preliminary period in Hospital School of Nursing.

Second Year

			Hours				Hours
By	1	Bacteriology	3	By	10	Sanitation and Health	2
By	3	Bacteriology	2	He	66	Dietetics	2
He	63	Nutrition	2	Pe	4	Physical Education	0
Pe	3	Physical Education	0	Ps	4	Descriptive Physics	3
Py	1	Psychology	3	Py	2	Psychology	3
Sy	1	Sociology	3	Sy	2	Sociology	3
		Elective	3			Elective	3
			16				16

Third and Fourth Years in Hospital School of Nursing.

Fifth Year

			Hours				Hours
Ed	45	Curriculum, Teaching, and Evaluation of Instruction	3	Ed	36	Foundations in Education	3
Eh	15	Masterpieces of English and American Literature	3	Eh	16	Masterpieces of English and American Literature	3
Es	1	Economics	3	Es	2	Economics	3
Ne	55	Nursing Seminar	2	Ne	56	Nursing Seminar	2
		Elective	5			Elective	5
			16				16

COURSES OF INSTRUCTION

Courses numbered 1-50 are for undergraduates only; courses numbered 51-100 are primarily for upperclassmen and graduates; courses numbered above 100 are primarily for graduates.

When a dash is used between the two numbers (e.g., 1-2), both semesters must be taken to obtain credit; when a semicolon is used (e.g., 1; 2), the first semester may be taken by itself, but the second cannot be taken unless the first is taken previously; when a period is used (e.g., 1.2), either semester may be taken for credit.

When a course is regularly given in more than one semester, it is designated by two numbers, the second of which is in parenthesis [e.g., 1 (2)].

ART

ASSISTANT PROFESSOR HARTGEN

1; 2. Free-Hand Drawing and Sketching.—Fundamentals of drawing. Principles of perspective, shades and shadows, and composition, through use of still life sets and plaster casts. Pencil, charcoal, crayon, brush, and watercolors. Four laboratory hours weekly. *Two credit hours.*

11; 12. Advanced Free-Hand Drawing and Sketching.—Advanced studies in form, space, composition, and cast drawing. Field trips for outdoor sketching and painting. Course develops from charcoal to watercolor painting. Prerequisite, At 1; 2. Four laboratory hours weekly. *Two credit hours.*

13; 14. Painting and Rendering.—Studies in studio and landscape painting, with emphasis on composition, palettes, and techniques. Poster and illustration. Sepia, showcard, watercolor, oil and pastel. Prerequisite, At 11; 12. Four laboratory hours weekly. *Two credit hours.*

15. 16. Art Appreciation and History.—A study of art techniques and trends in architecture, painting and sculpture as related to the history of art from the very earliest times to the present day. Special emphasis on artists and schools. Lectures, text, slides, and study of prints. *Three credit hours.*

19. Art in the Community.—Discussions on the place of art in social and professional life. Architecture, advertising, town planning, etc. Lectures, assigned papers, open discussions. A one semester course. *Two credit hours.*

20. American Painting.—A survey of American painting, trends and schools, with special emphasis on present day activities. Lectures, references, study of prints and slides. A one semester course. *Two credit hours.*

CHEMISTRY

PROFESSORS DOUGLASS, BRANN; ASSOCIATE PROFESSOR OTTO; ASSISTANT PROFESSORS BEAMESDERFER, BOGAN, HART, MARTIN, TEBBE; MR. LEWIS, DR. TRUST

The chemistry curriculum in the College of Arts and Sciences conforms to the requirements set up by the American Chemical Society Committee for the Professional Training of Chemists. Required chemistry courses include Ch 1, 2, 31, 40, 51, 52, 64, 71 and 72. In addition, advanced courses in organic, inorganic, physical chemistry or biochemistry equivalent to two lectures per week for two semesters, and three hours of laboratory per week for one semester are also required. Courses

in mathematics must include differential and integral calculus. A reading knowledge of German is required; hence, freshmen who think they might possibly be interested in a chemistry major should elect German as their foreign language. One year of physics is required and a second year is recommended. In addition to freshman composition and the required German, the student's training is broadened through the inclusion of a minimum of 16-18 semester hours in courses other than the physical sciences.

Courses in the Department of Chemistry are described under the College of Technology.

ECONOMICS AND SOCIOLOGY

Professors Kirshen and Hawley; Associate Professor Ryan; Assistant Professor Weiler; Mr. Christy, Mr. Gallagher, Miss Johnson, Mr. Romanyshyn, Mr. Sezak, Dr. Silk, Miss Wilson; Mr. Adriance, Mr. Dietrich; Mrs. Anderson, Mr. Grant, Mr. Stotler

Cooperating Members: Professor Dow, Associate Professor Virtue, Mr. Lebrun

Students may major in one of the following three fields: (1) Business Administration, (2) Economics, and (3) Sociology.

Specific requirements:

Business Administration: My 1; 2, Modern Society; Ba 9 (10), Accounting; Es 1, Principles of Economics; Es 5 (6), Comparative Economic Systems; Ms 19 (20), Statistics.

Economics: My 1; 2, Modern Society; Es 1, Principles of Economics; Es 5 (6), Comparative Economic Systems. Majors in Economics who plan to register for Ba 51, Corporation Finance; Ba 54, Investments; or Ba 63; 64, Marketing, are required to complete one semester of Accounting.

Sociology: My 1;2, Modern Society; Sy 3, Social Problems; Sy 96, Sociological Theory.

All courses in the Department are for juniors and seniors with the exceptions of Ba 9 (10), Es 1, Es 5 (6), Sy 3, Sy 11 (12), Sy 24, and Sy 26.

Courses in Business Administration

9 (10). Accounting.—The fundamental principles of accounting are developed to show the source and type of information included on the balance sheets and income statements of modern business firms. Ba 9 (10) is prerequisite for Ba 41. 42, Ba 44, Ba 51, and Ba 63; 64. *Three credit hours.*

Mr. Christy, Mr. Grant

41. 42. Intermediate Accounting.—A course in cost accounting which deals with the three phases of costs—process, job, and standard. Prerequisite, Ba 9 (10). Ba 42 given in 1947-48 and alternate years. *Three credit hours.*

Mr. Christy

44. Analysis of Financial Statements.—A study of how accounting financial statements are used by banks, credit companies, investment houses, and industrial

corporations. Prerequisite, Ba 9 (10). Given in 1948-49 and alternate years. *Three credit hours.* MR. CHRISTY

51. Corporation Finance.—The position of the modern business corporation from the financial point of view. Corporate securities, intercorporate relations, underwriting, financial plans, management and control are a few of the basic problems considered. Prerequisite, Ba 9 (10). *Three credit hours.* MR. HAWLEY

52. Social Control of Business.—The emphasis is upon public policies concerning monopolistic and competitive practices. *Three credit hours.* MR. KIRSHEN

54. Investments.—The study of corporate securities and the security markets as related to the formulation of personal investment policy. The importance of continuous investment management is emphasized through an analysis of specific securities and their position in the business cycle. Prerequisites, Ba 9 (10) and Ba 51. *Three credit hours.* MR. HAWLEY

55 (56). Business Law.—An analysis of the nature and significance of the judicial process particularly as developed through a study of contracts and agency. *Three credit hours.* MR. KIRSHEN, MR. CHRISTY

57 (58). Business Law.—A continuation of Ba 55 (56) concerned chiefly with negotiable instruments, sales, and suretyship. Prerequisite, Ba 55 (56). *Three credit hours.* MR. KIRSHEN

59. Business Management and Policy.—A study of the functions of management and the formulation and execution of business policy. Not offered in 1947-48. *Three credit hours.*

60 (61). Personnel Management.—The selection, training, and management of personnel in private and public business. Designed for the student interested in administration, office management, or personnel work in education, business, engineering, public service, and other fields. *Three credit hours.* MR. DOW

63; 64. Marketing.—A consideration of the problems of distribution for representative industrial and consumer goods. Important areas covered include merchandising policies, selection of distribution channels, price policies, and advertising and sales promotion methods. Prerequisite, Ba 9 (10). *Three credit hours.* MR. HAWLEY

97. 98. Projects in Business Administration.—For the advanced student desiring to study a particular field of his own selection under the guidance of a member of the staff. Prerequisite, 15 hours of Business Administration and permission of the head of the department. *Hours arranged.*

125. Graduate Thesis.—*Six credit hours.*

Courses in Economics

1. Principles of Economics.—Analysis of the fundamental characteristics and institutions of modern economic society. Particular attention is paid to the problems of national income and employment. With the exception of Ba 9 (10), Accounting, this course is a prerequisite for all courses offered in Business Administration and Economics, unless waived by the head of the department. *Three credit hours.* THE STAFF

5 (6). Comparative Economic Systems.—An investigation of the basic differences among the contemporary economic systems of capitalism, socialism, communism, and fascism. This course is required of majors in Economics and Business Administration. *Three credit hours.* THE STAFF

33. Labor Problems.—Description and analysis of labor organizations in their relationship to employers, workers, and society. *Three credit hours.* MR. SILK

53. Money and Banking.—The monetary and banking system of the United States; theories of the value of money. *Three credit hours.* MR. SILK

62. Business Cycles.—Theories of the business cycle and its control. *Three credit hours.* MR. SILK

64. International Trade.—The growth of international trade and ideas concerning it. The processes of international exchange, the development of controls such as tariffs and quotas will be considered. *Three credit hours.* MR. GALLAGHER

71. Public Finance.—Government revenues, expenditures, and current fiscal problems. *Three credit hours.* MR. RYAN

74. Labor Legislation.—Stresses the National Labor Relations Act, the Taft-Hartley Law, the Fair Labor Standards Act, and Social Security. *Three credit hours.* MR. SILK

76. Public Utilities.—The problems involved in valuation, costs, prices, and regulation. *Three credit hours.* MR. RYAN

80. American Labor Movement.—Not given in 1947-48.

91 (92). Economic Analysis.—Price and distribution theory as a tool in the study of economics. *Three credit hours.*

97. 98. Projects in Economics.—For the advanced student desiring to study a particular field of his own selection under the guidance of a member of the staff. Prerequisite, 15 hours of Economics and permission of the head of the department. *Hours arranged.*

125. Graduate Thesis.—*Six credit hours.*

Courses in Sociology and Social Work

3. Social Problems.—A study of selected social problems. *Three credit hours.* THE STAFF

11 (12). Social Anthropology.—Principles, forms, origins, and evolution of the enduring institutions of society. Comparison of customs, folkways, morals and other aspects of various cultures, especially primitive. *Three credit hours.* MR. WEILER

24. Rural Sociology.—A study of the social aspects of agriculture and rural life in changing world. An understanding of rural life; its people, neighborhoods, community, interest groups, institutions, and social processes. This course is the same as Fm 24. *Three credit hours.* MR. LEBRUN

26. Urban Sociology.—City life: environment, social organization, populations, areas, housing, and maladjustments. *Three credit hours.* MR. SEZAK

51. The Field of Social Work.—Public and private social welfare agencies and institutions, preceded by a historical introduction. Discussion of aims, principles, and methods from the intelligent citizen's point of view. Prerequisite, My 1;2 or Sy 3. *Three credit hours.* MR. WEILER

52. Child Welfare.—The growth of social behavior in children with particular emphasis upon the early social experiences to adjustment problems of later life. The dependent, neglected, delinquent defective and illegitimate child and methods of care and treatment. Prerequisite, Sy 51. Given in 1947-48 and alternate years. *Three credit hours.* MR. DIETRICH

56. The Juvenile Delinquent.—Conditions underlying juvenile delinquency

including social, physical, and emotional aspects. The extent and nature of the problem, the juvenile court and treatment including probation and parole, institutional care, foster home placement and social change. Given in 1948-49 and alternate years. Prerequisite, Sy 51. *Three credit hours.* MR. DIETRICH

57. Group Work Leadership.—Philosophy and methods of group work in schools, camps, and character-building agencies. Prerequisites, Py 1;2 and Sy 3. *Three credit hours.* MISS WILSON

59. Marriage and the Family.—Preparation for intelligent participation in family life by means of a study of cultural backgrounds of, and social relationships in marriage and the family. *Three credit hours.* MR. WEILER

63. Criminology.—The relationship between social organization and criminal behavior. Theories concerning the causes of crime, punishment, rehabilitation, and methods of prevention are considered. Prerequisite, Sy 3. *Three credit hours.* MR. ROMANYSHYN

66. Public Welfare.—Principles of interviewing, treatment, and administration applied to welfare work by public agencies. Attention is given federal, state, and local welfare legislation with particular reference to Maine. Given in 1948-49 and alternate years. Prerequisite, Sy 51. *Three credit hours.* MR. WEILER

71. Principles of Case Work.—Case work techniques including interviewing, recording, referral, preparation of the social case study, evaluating and planning. Actual case histories are analyzed. Prerequisite, Sy 51. *Three credit hours.* MR. DIETRICH

72. Field Practice in Social Work.—The student will be placed with one of several cooperating social agencies in Bangor where he will handle, under supervision, actual cases or recreational or club groups. Assigned readings with reports required. Prerequisite, Sy 71. *Three credit hours.* MR. DIETRICH

82 (83). Population.—Theories of population, world and American trends, migration, problems and policies are considered. Prerequisite, Sy 3, or permission of instructor. Given in 1947-48 and alternate years. *Three credit hours.* MR. WEILER

84. Race Relations.—The status of minority groups in the United States. Race prejudice is considered as an aspect of our social organization. Given in 1948-49 and alternate years. *Three credit hours.* MR. ROMANYSHYN

86. Cultural Evolution.—The nature and importance of culture with particular reference to the development of those institutions not covered in Sy 11 (12). Prerequisite, Sy 11 (12). *Three credit hours.* MR. WEILER

96. Sociological Theory.—A history of Sociology. Theoretical contributions of both American and European sociologists, and an analysis of American culture through contemporary sociological research. Required of senior majors. Others by consent of the instructor. *Three credit hours.* MR. ROMANYSHYN

97. 98. Projects in Sociology.—For the advanced student desiring to study a particular field of his own selection under the guidance of a member of the staff. Prerequisite, 15 hours of Sociology and permission of the head of the department. *Hours arranged.*

125. Graduate Thesis.—*Six credit hours.*

ENGLISH

PROFESSORS TURNER, SMALL, JORDAN, AND FLEWELLING; ASSOCIATE PROFESSORS SCAMMAN, CROSBY, WENCE†, WHITNEY, AND REYNOLDS; ASSISTANT PROFESSOR SANDERLIN; DR. FIFE, DR. MOORE, MISS CHAMBERS, MISS FAIRBANKS, MISS KINGSTON, MR. MORSE, MR. WATSON, DR. EDWARDS, MISS CROWELL, MR. STARBIRD; DR. PERCIE TURNER, MR. DAMON

Major fields may be selected in English literature, American literature and history, creative writing, journalism, comparative literature, dramatic literature, or other natural combinations.

Students expecting to major in English should take Eh 3. 4 in their sophomore year. They should also at some time include in their curriculum Eh 7 (or 8) and Eh 43, American Literature.* A grade of C or better is expected in Eh 3. 4 and in eighteen hours of the major curriculum taken in the junior and senior years. Majors in English literature are required to take Hy 17. 18, History of England, or to pass an examination in the subject set by the English Department.

The departmental major examinations comprise (a) an examination in the mechanics of composition in the spring semester of the junior year; (b) a critical report on some selected author in October of the senior year; (c) a written examination over the student's advanced work; and (d) a comprehensive oral examination, both in the student's final semester. A passing grade, and an average of C, in the written examinations are required for graduation.

Students planning to teach English should take Eh 84, and Eh 67 or 68.

Graduate students in English beginning their work after January 1, 1948, must possess a reading knowledge of one foreign language.

Courses in Composition and Rhetoric

1; 2. Freshman Composition.—Expository and narrative writing, required of all freshmen not excused by special examination, and prerequisite for all other English courses. *Three credit hours.* MR. WHITNEY, Chariman

2TY. For students in the Two-Year Course in Agriculture.—A review of grammar and the principles of effective writing, with attention also to spelling and punctuation. Weekly papers, chiefly expository, are required. *Two credit hours.* MISS FAIRBANKS

3TY. For students in the Two-Year Course in Agriculture.—Instruction in practical uses of English, including business correspondence, with as much review of grammar as seems necessary. *Two credit hours.* MISS FAIRBANKS

5 (6). Technical Composition.—The principles and techniques of business correspondence and of technical reports and papers. Prerequisite, junior standing in Technology or Agriculture. *Two credit hours.* MR. SCAMMAN, Chairman

7. 8. Second-Year Composition.—In the first semester the writing of informal essays and articles; in the second, descriptive and narrative writing. *Three credit hours.* MR. FLEWELLING, Chairman

19. Expository Writing (Home Economics).—A writing course for students who plan careers in Home Economics education, extension or club work,

† At Brunswick.

* The Eh 43 requirement does not apply to the class of 1948.

dietetics, or merchandising. For juniors and seniors. *Two credit hours.*

MISS KINGSTON

77. 78. Creative Writing.—An advanced course for students of exceptional interest and ability in some field of writing. Prerequisites, English 7 and 8, with honor grade, or permission of instructor. *Three credit hours.* MR. WHITNEY

Courses in Literature

3. 4. History of English Literature.—English literature from the beginning to the present, emphasizing its historical development and the work of the chief writers. Course 3. 4, or Course 15. 16 is a general prerequisite for advanced courses in English literature. *Three credit hours.* MR. REYNOLDS, Chairman

9 (10). Modern Literature.—Works of contemporary interest, to cultivate appreciation and enjoyment of good reading, and understanding of current thought. *Not open to students in Arts and Sciences. Two credit hours.*

MR. SCAMMAN, Chairman

15. 16. Masterpieces of English and American Literature.—An introduction to literary appreciation through the study of selected masterpieces from English and American literature. Not open to students who have had any other literature courses in the department. *Three credit hours.* MISS CROSBY, Chairman

31; 32. Political and Social Ideals in English Literature.—The character and development of English political and social thought contrasted with that of continental Europe, as reflected in representative English writings from the age of Chaucer to 1900. *Two credit hours.* MR. WENCE

35. 36. Recent Drama.—Outstanding dramatists and plays, mainly of the twentieth century. Continental and British drama is taken up in the first semester and American drama in the second. Two credit hours. MR. WHITNEY

37 (38). Tennyson and Browning.—Reading and discussion of the works of Tennyson and Browning, with the aim of developing an intelligent interest in poetry. *Two credit hours.* MR. TURNER

39; 40. The English Bible.—The King James translation studied as one of the chief masterpieces of English literature and in its relation to later works by English and American writers. *Two credit hours.* MR. REYNOLDS

41. Recent Writers of Maine.—Writers included are E. A. Robinson, Edna St. Vincent Millay, Robert Coffin, Mary Ellen Chase, Kenneth Roberts, Gladys Hasty Carroll, Rachel Field, Ben Ames Williams, and Owen Davis. *Two credit hours.*

43 (44). American Literature.—The history of American literature from the beginnings to the twentieth century, with emphasis on the principal writers. *Three credit hours.*

45. 46. Twentieth-Century Literature.—Poetry and the novel from 1900 to the present. British writers are considered in the first semester, American in the second. *Three credit hours.* MR. FLEWELLING

In order to take courses 51-100, unless special prerequisites are stated, a student must have passed six credits of literature courses in the English Department. Dean's List students are also admitted. These courses may, with the necessary approval, be taken for graduate credit by any qualified student.

54. Chaucer.—Selections from the *Canterbury Tales* and the Minor Poems, stressing the reading of Chaucer as poetry, his literary range and qualities, and his picture of his time. *Three credit hours.* MISS CROSBY

55. Poetry of the Romantic Movement.—Wordsworth, Coleridge, Byron, Shelley, Keats, and their contemporaries, against the background of their time. *Three credit hours.* MR. TURNER

56. Victorian Poetry.—Browning, Tennyson, Arnold, the pre-Raphaelites, and their contemporaries. *Three credit hours.* MR. TURNER

57. 58. Shakespeare.—A careful study of ten plays and the reading of others, with some consideration of the earlier English drama. Elizabethan stage conditions, and Shakespeare's dramatic contemporaries. Emphasis on the comedies in the fall semester and in the great tragedies in the spring. *Three credit hours.* MR. SMALL

61. 62. History of British Drama.—In the first semester, the development of the drama in England from the miracle plays to 1660. In the second, tendencies from the Restoration period to the twentieth century. *Three credit hours.* MR. WHITNEY

65. 66. Restoration and Eighteenth Century Literature.—The evolution of Neo-classicism and its transition into the early Romantic Movement, as shown in the various types of literature that flourished in this period. *Three credit hours.* MR. REYNOLDS

69. The American Novel.—The chief American novelists of the nineteenth century and their work. *Three credit hours.* MR. FLEWELLING

71. Early American Literature.—The development of American Literature from the beginnings to 1800. Prerequisite, Eh 43. *Three credit hours.* MR. FLEWELLING

72. The New England Renaissance.—The study of its literature and ideas, with some attention to associated writers. Prerequisite, Eh 43. *Three credit hours.* MR. FLEWELLING

81. 82. The English Novel.—In the first semester, the history of the English novel from the medieval prose romances to the death of Scott; in the second, the Victorian novel and recent British novelists. *Three credit hours.* MR. TURNER

101 (102). Graduate Seminar.—Subjects and credit vary.

Courses in Journalism

23; 24. News Writing.—A writing course, designed as an introduction to reporting and general newspaper practice, accompanied by a reading program related to the journalist's work. For juniors and seniors. Prerequisite for all journalism courses except Eh 25. *Three credit hours.* MR. JORDAN

25. History of the American Newspaper.—A review of the newspaper's role in American history, with emphasis on the processes of public opinion in a democracy and with attention to important personalities in editing and publishing. *Two credit hours.* MR. JORDAN

92. The Newspaper and the Community.—A study of the relationships of the newspaper and the public, with especial attention to rural communities and small cities. For juniors and seniors who have had or are taking 23; 24. *Two credit hours.* MR. JORDAN

93. 94. Advanced Reporting.—Intensified training in news writing, with emphasis on the reporting of public affairs, and with concurrent part-time newspaper employment as a requirement. For seniors who have had 23; 24. *Three credit hours.* MR. JORDAN

95. 96. News Editing.—An introduction to editorial desk work, with practi-

cal training in news selection, copy-editing, and headline-writing. For seniors who have had 23; 24. Six hours of class work a week. *Three credit hours.* MR. JORDAN

97. Newspaper Make-Up.—A study of the principles of typography and pictorial composition in their everyday newspaper applications. Instructor's permission required. *Two credit hours.* MR. JORDAN

Courses in Linguistics

51; 52. Anglo-Saxon.—Anglo-Saxon grammar and reading of easy prose and poetry. Reading of *Beowulf* in the second semester. Lectures on the literature of the period. *Three credit hours.* MR. SMALL

67. History of the English Language.—English words and their background; changes in sounds, forms, and meanings. Recommended for students preparing to teach or do graduate work in English. *Two credit hours.* MR. SMALL

68. The American Language.—Our present-day usage and vocabulary as developed from Colonial times. The problem of standard speech. *Two credit hours.* MR. SMALL

Courses in the Teaching of English

84. Teaching of English in the High School.—A practical survey of materials in common use in high-school English classes, together with an examination of current methods and theories. Review of mechanics, practice in theme-correction, and remedial reading. *Three credit hours.* MISS FAIRBANKS

Courses in Comparative Literature

Cp 39; 40. The Literature of Social Change.—Notable works which have influenced the social or political order, and their present-day significance. *Three credit hours.* MR. WENCE

Cp 73; 74. Literary Criticism.—From Plato to the present. Includes reading of selected classics, and practice in criticizing contemporary literature. *Three credit hours.* MR. SANDERLIN

Cp 75; 76. European Literature.—Continental European literature in translation from Homer to the Renaissance in the first semester and down to the present in the second. Recommended for majors in foreign languages or history and for students preparing for library work. *Three credit hours.* MR. TURNER

GEOLOGY AND GEOGRAPHY

ASSOCIATE PROFESSOR TREFETHEN; ASSISTANT PROFESSORS SHAININ AND GOLDTHWAIT

Geology is the branch of Natural Science which deals with rocks and minerals, their arrangement, occurrence, properties, and surface expression as modified by various agents. Geography is the science of surface differentiation. It is primarily concerned with the description and explanation of the natural and cultural features of the earth's surface. Geography is thus intermediate between the natural and social sciences.

A major course in geology is offered for students in the College of Arts and Sciences. The geology curriculum is designed to give the student a thorough

understanding of the fundamentals of the science. Specialization within a particular branch of geology requires graduate work. In addition to the prescribed courses in geology, a geology major should include basic courses in both the physical and biological sciences, surveying, and drafting. It is desirable that prospective majors confer with the geology staff before making out sophomore programs.

Courses in Geology and Geography

1. Principles of Geology, Physical.—A study of earth materials and processes, vulcanism, mountain building, the work of seas, streams, ice and winds. Includes elementary map interpretation and identification of a few minerals and rocks. Classroom, *three hours a week;* laboratory or field trip, *three hours a week. Four credit hours.* MR. TREFETHEN, MR. SHAININ, MR. GOLDTHWAIT

2. Principles of Geology, Historical.—The history of the earth and its inhabitants with special reference to North America. Emphasis on principles and methods. Laboratory includes study of fossils and maps. Classroom, *three hours a week;* laboratory, *three hours a week. Four credit hours.*
MR. TREFETHEN, MR. SHAININ, MR. GOLDTHWAIT

3. Descriptive Geology, Physical.—A survey course presenting the landscape as a result of the geological agents. A summary view of the work of streams, glaciers, the seas, winds, and organisms. *Three hours a week. Three credit hours.*
MR. TREFETHEN, MR. SHAININ, MR. GOLDTHWAIT

4. Descriptive Geology, Historical.—A survey of earth history. Traces the coincident developments of life and environments up to the advent of man. *Three hours a week. Three credit hours.*
MR. TREFETHEN, MR. SHAININ, MR. GOLDTHWAIT

5. Advanced General Geology.—An analysis of the geologic work of wind, ice, and water, including the interpretation of land forms. Prerequisite, Course 1 or 16. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. GOLDTHWAIT

6. Common Rocks and Minerals.—A study of the common minerals and rocks, their identification, occurrence, and origin. Prerequisite, Course 5 or 16. Classroom, *two hours a week;* laboratory, *one afternoon a week. Three credit hours.*
MR. TREFETHEN

8. Mineralogy.—A study of the physical and chemical properties of minerals, including an introduction to crystallography. In the laboratory the student studies crystal models and identifies minerals. Prerequisite, Course 6 or 16. or Ch 31. Classroom, *two hours a week;* laboratory, *six hours a week. Four credit hours.*
MR. SHAININ

16. Geology.—A study of geologic materials, including origin, identification, modes of occurrence, distribution and engineering characteristics. For students in technology and agriculture. Classroom, *two hours a week;* laboratory, *three hours a week for nine weeks. Two-and-a-half credit hours.* MR. TREFETHEN

17. Engineering Geology.—A study of the geological processes as related to civil engineering practice, foundations, excavation, surface and ground water problems, stream control, shore defense, etc. Includes reading and interpretation of geologic maps. Prerequisite, Course 16. Classroom, *two hours a week;* laboratory, *three hours a week for nine weeks. Two-and-a-half credit hours.*
MR. TREFETHEN

21. Introduction to Regional Geography.—An elementary course in college geography covering the natural and cultural aspects of selected major geographic regions of the world. (For 1948 the regions selected are the U.S.A. and the U.S.S.R.). *Three hours a week. Three credit hours.* MR. TREFETHEN

22. Economic Geography.—The geographical aspects of world resources, production, and trade. *Three hours a week. Three credit hours.* MR. TREFETHEN

51. Structural Geology.—A consideration and analysis of the principal geologic structures, their recognition, delineation, and methods of study. Problems and map interpretation. Prerequisite, Course 6 or 17. *Three hours a week. Three credit hours.* MR. TREFETHEN

52. Economic Geology.—The formation, structure and classification of economic mineral deposits. An analysis of a few of the more important mineral districts. Emphasis is placed on the processes of formation. Prerequisite, Course 6 or 16. *Three hours a week. Three credit hours.* MR. TREFETHEN

53. 54. Seminar.—Written and oral reports with discussions on assigned topics in any special branch of Geology. *Two hours a week. Two credit hours.* STAFF

55. 56. Thesis.—The study of and report upon some original investigation. *Time to be arranged. Two credit hours.* MR. TREFETHEN

58. Field Geology.—A consideration of the methods of field geology and an analysis of some of the problems encountered in the field. Use of the plane-table, Brunton compass, and other instruments. Prerequisites, Courses Ce 5 (Surveying) and Gy 6. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. SHAININ

82. Advanced Engineering Geology.—A study of selected geological topics and problems related to civil engineering practice. Prerequisite, Course 17. *Two hours a week. Two credit hours.* MR. TREFETHEN

HISTORY AND GOVERNMENT

PROFESSORS DOW AND WHITMORE; ASSISTANT PROFESSORS STEWART AND YORK; MR. BAIER, MR. HESS, MR. JEFFREY, MR. SUAREZ, MR. THOMSON, MR. TRAFFORD, MISS WENTWORTH, MR. WHITTEN, MR. WICK, MR. WORTHINGTON; MR. ALLEY, MR. GILLIS, MR. MAWHINNEY

Students in the School of Education or College of Arts and Sciences who expect to offer history as a teaching subject should take Courses 3. 4, 5. 6, and six hours of advanced work previously approved by the Head of the Department of History and Government. Grades should be C or better in all courses. Many teachers are called upon to teach Civics, Citizenship, or Current Events courses, and consequently Gt 1. 2 or 31. 32, is advised for this purpose.

Courses in Government

1. 2. Introduction to Government.—A comparative analysis of principal modern governments, including the United States, Great Britain and the USSR. The course will cover political institutions, the process of politics and administration, political and constitutional thought. *Three credit hours.*

MR. THOMSON, Chairman, MISS WENTWORTH

7. 8. Maine Government.—Practical operation and current problems of

state and local government in Maine. One lecture each week by an official, followed by a discussion period. *Two hours a week. One credit hour.*

MR. DOW and GUEST LECTURERS

9. National and State Planning.—Master plans, zoning, economic and sociological factors, correlation with local planning. *Two credit hours.* MR. HESS

10. Community Planning.—Urban and rural zoning, master plans, land use, fiscal abilities, and local services. *Two credit hours.* MR. HESS

31. 32. American Government.—Principles and functions of Federal and state government, Congress, state legislatures, the presidency, courts, and constitutions. *Three credit hours.* MR. SUAREZ, Chairman, MR. WICK

33. Municipal Government.—The process of government in modern cities; types of city government; metropolitan areas; home rule; nominations and elections; relations with the Federal and state governments. *Three credit hours.*

MR. HESS

34. Municipal Administration.—Special emphasis on the city plan; financial control and administration; line functions—fire, police, and recreation; civil service; and citizen interest. *Three credit hours.* MR. HESS

35 (36). Comparative Government.—A study of governments, political parties, and current problems in the leading nations of the world. Prerequisite, Course 1. 2. *Three credit hours.*

51. 52. Public Administration.—Present organization and current developments in Federal, state and local government. Personnel, organization, fiscal administration, administrative law, administration and politics. Prerequisite, Course 1. 2 or 31. 32. *Three credit hours.* MR. HESS

53 (54). Government Controls.—The political and administrative problems of government control of the economy. The analysis will include institutional and ideological factors in the laissez faire state, the state as promoter of private enterprise, regulation, the social service state and compensatory planning. Prerequisite, six hours of government or economics. *Three credit hours.*

MR. SUAREZ

55 (56). Political Parties.—The development and present organization of party government in the United States. The analysis will include parties as vehicles for the principal contenders for power, as organized machines of professional politicians, as mediators of social and economic conflict, and as contributors to responsible government under separation of powers. Given in 1948-49 and alternate years. *Three credit hours.* MR. SUAREZ

73. 74. International Relations.—A survey of the problems of international life arising out of nationalism, imperialism, race conflicts, etc. How these problems are met by treaties, conferences, and such agencies as the United Nations. Prerequisite, six hours of history or government. *Three credit hours.* MR. BAIER

81; 82. Introduction to Law.—Origin and development of the great legal systems. The treatment is cultural and historical rather than technical. Open to juniors and seniors. Given in 1948-49 and alternate years. *Three credit hours.*

MR. SUAREZ

83; 84. The American Constitution.—The constitution as it develops through court decisions in such fields as commerce, protection of life, liberty, and property. Court procedure and the lives of famous judges. Prerequisite, Course 1. 2, or 31. 32. Given in 1949-50 and alternate years. *Three credit hours.*

MR. SUAREZ

87; 88. International Law.—Historical and case treatment of such matters as the development of international law, discovery and occupation of territory, recognition of governments, maritime law, arbitration, land and sea warfare. *Three credit hours.*

95. 96. Government Seminar.—Projects for qualified seniors. *Two or three credit hours.* MR. DOW

97 (98). Public Opinion.—Formation and operation of the public will in democracies. Public opinion in campaigns; radio, newspapers, and pressure groups; straw votes; civil liberties; censorship; fifth columnists, etc. *Three credit hours.* MR. SUAREZ

99. 100. Political and Social Thought.—A critical examination of the nature of the state in the philosophies of Plato, Aristotle, Cicero, Machiavelli, Hobbes, Locke, Rousseau, Montesquieu, and others; an evaluation of classical liberalism, pluralism, irrationalism, collectivism, and democracy. Permission required. *Three credit hours.* MR. THOMSON

125. Graduate Thesis.—*Six credit hours.*

See also ***Personnel Management,*** under the department of Economics and Sociology.

Courses in History

1. 2. Ancient Civilization.—Achievements of the Greeks and Romans in laying the foundations of Western life and thought with some attention to Egyptian and Eastern civilization as the background of classical culture. *Three credit hours.* MR. WORTHINGTON

3. 4. United States History.—From 1789 to recent years. The development of democracy, growth of the West, slavery and sectionalism, the Civil War, reconstruction, the making of modern America, industrialization, imperialism, and other topics. *Three credit hours.*

MR. WHITMORE, Chairman, MR. JEFFREY, MR. WICK

5. 6. History of Western Europe.—Europe and its civilization from the decline of the Roman Empire to the present. The emphasis is upon the development of those political, economic, and social institutions which help to explain our present-day civilization. *Three credit hours.*

MISS STEWART, Chairman, MR. TRAFFORD, MR. BAIER

9. 10. History of Maine.—A survey of Maine's social, economic, and political life, from primitive times to the present. After a brief study of Indian life preceding white settlement, the periods of Colonial, Provincial, and State history are covered. *Two credit hours.*

17. 18. History of England.—From 55 B.C. to the present. Political and constitutional aspects including development of parliamentary government; the evolution of modern England and the British Commonwealth of Nations receive special emphasis. *Three credit hours.* MR. TRAFFORD, CHAIRMAN, MISS STEWART

21 (22). Current World Problems.—A survey of national and international problems of the day for those who wish to see behind the headlines. Open to all students. *Two credit hours.* MR. WHITTEN

51. The French Revolution.—The background of the revolution and its political, social, economic, and intellectual aspects. Spread of its principles over Europe. Prerequisite, Course 6. Given in 1949-50 and alternate years. *Three credit hours.* MR. TRAFFORD

52. The Revolutionary Era.—Development of Europe from the Congress of Vienna through the Franco-Prussian War. Liberalism, nationalism, and chief intellectual movements. Prerequisite, Course 6. Given in 1949-50 and alternate years. *Three credit hours.* MR. TRAFFORD

53. Europe from 1870.—The internal development of modern states of Europe; the development of nationalism; the new imperialism; the background of World War I; the treaties of peace. Prerequisite, Course 6. Given in 1948-49 and alternate years. *Three credit hours.* MR. TRAFFORD

54. Contemporary Europe.—The national and international problems of the European powers from the Paris Peace Conference to the present. Prerequisite, Course 6. Given in 1948-49 and alternate years. *Three credit hours.* MR. TRAFFORD

55. 56. History of Russia.—A survey of Russian history from the earliest times to recent years. Emphasis is given to those political, social, and economic processes that have molded the development of modern Russia. Russian foreign policy is traced from its national beginnings to recent times. A major purpose of the course is to afford an understanding of present Russia. Prerequisite, Course 5. 6. *Three credit hours.* MISS STEWART

57. American Colonial History, 1607-1688.—The founding and the early political, social, and economic development of the colonies. English colonial policy of the Commonwealth and the Restoration periods. Permission of the instructor required. *Two credit hours.* MR. WHITMORE

58. American Colonial History, 1689-1789.—The development of the colonies in the eighteenth century; the remote and immediate causes and the results of the Revolution. Permission of the instructor required. *Two credit hours.*

MR. WHITMORE

59. 60. Economic History of the United States.—From the colonial period to the present with special attention to the problems raised by the economic evolution of the country. Prerequisite, six hours of history, government, or economics. Given in 1948-49 and alternate years. *Three credit hours.* MR. YORK

61. Twentieth-Century America.—The Progressive Movement, the Wilson reforms, the World War, return to "Normalcy," the depression of 1929, the New Deal, etc. Permission of the instructor required. *Two credit hours.* MR. YORK

62. Maritime History of the United States.—Ships and trade from colonial days to the present, including famous ships and ship builders, the evolution from wood to iron and steel ships, the effect of the Civil War and the World War on our merchant marine. Permission of the instructor required. *Two credit hours.*

MR. WHITMORE

63. 64. Canadian History.—A survey of Canadian history from early French settlement to the present, with emphasis on political and economic evolution, and Canada's relations with the U. S. Prerequisite, six hours of history. *Two credit hours.* MR. WHITTEN

65. 66. Hispanic America.—The Spanish and Portuguese colonial empires in America to their achievement of independence, and the national period of Hispanic America, with emphasis on present day conditions in Argentina, Brazil, and Mexico. Prerequisite, six hours of history. *Three credit hours.* MR. JEFFREY

67. 68. American Diplomatic History.—American diplomatic history from the Revolution to the present with emphasis on the formation and application of America's major foreign policies. Prerequisite, six hours of history or government. Given in 1947-48 and alternate years. *Three credit hours.* MR. YORK

69. 70. Social History of the United States.—American social and cultural development as illustrated in its thought, literature, fine arts, religion, and humanitarian reforms. Prerequisite, six hours of history, government, or economics, Given in 1947-48 and alternate years. *Three credit hours.* MR. YORK

71 (72). History of the West.—This course concerns the story of the frontier region. It begins with the coming of the white man and ends with the disappearance of the frontier about 1900. Prerequisite, a preliminary college course in American history. *Two credit hours.*

73. 74. Economic History of Europe.—The economic history of Europe from the feudal epoch to the present. The rise of the towns, the guilds, mercantilism, and capitalism. Prerequisite, six hours of history, government, or economics. *Three credit hours.*

83. 84. The Far East.—Primarily a survey of the history of Japan, China, Korea, and Manchuria, from 1350 to the present, with emphasis on the political, institutional and cultural evolution of these countries. Prerequisite, six hours of history. *Three credit hours.*

85 (86). Problems of Latin-America.—Recent problems facing Latin American nations in relation to the world and in their internal development. *Two credit hours.* MR. JEFFREY

87 (88). Latin America and the United States.—United States participation in Latin American affairs from the recognition of independence and the Monroe Doctrine to the Good Neighbor Policy and the present day. *Two credit hours.*

MR. JEFFREY

97-98. Seminar.—The course is designed for history majors in their senior year. It includes inquiry into the nature of history, the principles and techniques of historical research and writing, a study of selected areas in historiography and directed reading in the student's major field. *Three credit hours.*

MR. YORK AND STAFF MEMBERS

HONORS PROGRAM

PROFESSORS LEVINSON, Chairman, AND KIMBALL; ASSOCIATE PROFESSORS GLANVILLE, MILES, AND VIGNERAS; ASSISTANT PROFESSORS SANDERLIN, AND YORK; MR. STALLWORTHY

Honors courses prior to the junior year fulfill a double purpose. Through wide reading, chosen from the Honors Reading List, they provide a broad orientation over the field of the Arts and Sciences, while serving also as preparatory to the more specialized Honors work proper of the junior and senior years.

The courses for juniors and seniors are intended primarily to afford training in the investigation of restricted subjects (although a continuation of the general reading may, in some cases, serve as a substitute in the junior year). In the junior year the work is ordinarily done in the student's major field, but, with the approval of the committee, the student may elect to work in some other field. In the senior year, however, attention is concentrated upon a definitely limited problem falling within the major field; and the final results are embodied in a thesis. (See Honors Program, page 105.)

All Honors courses are under tutorial direction. Permission of the Committee on Honors Work is a prerequisite for each.

46. Sophomore Honors.—Optional for those entering the Honors Program. An individually arranged program of summer readings. *One credit hour.*

47. 48. Sophomore Honors.—*Three credit hours.*

51. 52. Junior Honors.—*Three credit hours.*

53-54. Senior Honors.—*Three credit hours.*

MATHEMATICS AND ASTRONOMY

PROFESSORS KIMBALL, JORDAN, AND BRYAN; ASSOCIATE PROFESSORS LUCAS, STEWART, AND LAMOREAU; ASSISTANT PROFESSORS COMEGYS AND HOHN; MRS. ANDERSON, MR. DINSMORE, MR. GORDON, MR. HARMON, MRS. HART, MR. LAPIDUS, MRS. MAWHINNEY, MR. MONRO, MRS. STALLWORTHY; MR. TOOLE

ASTRONOMY

9 (10). Descriptive Astronomy.—An elementary course. The textbook is supplemented by lectures, illustrated by lantern slides, and by work in the observatory. *Three credit hours.* MR. JORDAN

11. Practical Astronomy.—Primarily for civil engineering students. The conversion of time, the determination of terrestrial latitudes, and the establishment of meridian lines. Prerequisites, Mathematics 1 and 3. Classroom, *two hours a week;* laboratory, *one hour a week.* Not given every year. *Two and one-half credit hours.* MR. JORDAN

14. Navigation.—The compass, piloting, dead reckoning, the sailings, celestial navigation. Prerequisite, Trigonometry. Not given every year. *Three credit hours.* MR. JORDAN

15; 16. General Astronomy.—A more complete treatment of the subject than is possible in Course 10. Prerequisite, Mathematics 1 or 5; 6. Not given every year. *Three credit hours.* MR. JORDAN

59; 60. Practical Astronomy.—The theory and use of the astronomical transit, zenith telescope, and equatorial; accurate determination of time and latitude. Prerequisites, Mathematics 1, 3, and 4, and Astronomy 9 or 15. Not given every year. *Three credit hours.* MR. JORDAN

MATHEMATICS

Students whose major subject is mathematics are required to take Courses 1, 3 (or 5; 6), 4, 7, 8, 15, and 16. Not less than twelve hours are to be selected from courses in mathematics, astronomy, and mechanics numbered 50 or above. One of the three courses, Higher Algebra, Advanced Calculus, or Projective Geometry, must be included.

Two years of high-school algebra are prerequisite for any of the following courses.

1. Trigonometry.—The trigonometric functions, their properties and uses in solving triangles. *Two credit hours.* MR. LUCAS, Chairman

3. College Algebra.—The binomial theorem, determinants, theory of equations, and other topics. *Two credit hours.* MR. LUCAS, Chairman

4. Analytic Geometry and Calculus.—Plane curves and their properties, treated with the use of algebra; an introduction to calculus. Prerequisites, Courses 1 and 3 or 5 and 6. *Four credit hours.* MR. LUCAS, Chairman

5; 6. Introductory College Mathematics.—Essentials of college algebra; properties and uses of trigonometric functions; analytic geometry. *Three credit hours.* MISS COMEGYS, Chairman

7; 8. Calculus.—Formal differentiation and integration with applications. Prerequisites, Courses 1, 3, and 4. *Five credit hours.* MR. HOHN, Chairman

9. College Algebra.—For freshman students in Forestry. *Two credit hours.*

10. Trigonometry.—For freshman students in Forestry. *Two credit hours.*

15. Advanced Algebra.—An introduction to the number system and a detailed theoretical study of topics such as determinants, matrices, and theory of equations. Prerequisite, Course 4 or 6. *Three credit hours.*

16. Advanced Analytic Geometry.—A continuation of the geometry of Courses 4 and 6, and certain topics in solid analytic geometry. Prerequisite, Course 4 or 6. *Three credit hours.*

17; 18. Mathematical Theory of Investment.—Interest, discount, annuities, amortization, the valuation of bonds, sinking funds and depreciation, life annuities and life insurance. *Two credit hours.* MR. STEWART, Chairman

19 (20). Statistics.—Elementary statistical techniques necessary in economics: graphs, measures of distributions, correlation, index numbers, time series. *Three credit hours.* MR. MONRO, Chairman

19L; 20L. Mechanical Computations.—Systematically arranged commercial problems and their solutions by means of electric calculators. Not given every year. Laboratory, *two hours a week. One credit hour.*

21 (22). Mathematical Statistics.—A theoretical approach to fundamental statistical concepts and processes. Prerequisite, Course 8. *Three credit hours.* MR. MONRO

54. Solid Analytic Geometry.—Lines, planes, and quadric surfaces, treated with the aid of determinants and matrices. Not given every year. Prerequisite, Course 16. *Three credit hours.*

55. Differential Equations.—Solution of equations involving derivatives; with applications. Not given every year. Prerequisite, Course 8. *Three credit hours.*

57; 58. Engineering Mathematics.—Ordinary and partial differential equations with applications to engineering problems; Fourier Series; Harmonic Analysis; Bessel Functions; Generalized Coordinates. Prerequisite, Course 8. *Three credit hours.*

59. Vector Analysis.—The vector algebra and calculus useful in theoretical work in Mathematics, Physics, and Engineering. Prerequisite, Course 8. *Three credit hours.*

60. Advanced Engineering Mathematics.—Elementary functions of a complex variable; matrix theory; LaPlace transformation theory. Prerequisite, Course 8. *Three credit hours.*

63. Fundamental Concepts of Mathematics.—Foundations of algebra and geometry. Designed for prospective teachers of secondary mathematics. Not given every year. Prerequisite, Course 8. *Three credit hours.*

64. College Geometry.—Modern Euclidean geometry, including such topics as the nine-point circle, harmonic section, and inversion. Not given every year. *Three credit hours.*

67; 68. Advanced Statistics.—Multivariate frequency distributions, small

sample theory, design of experiments, testing statistical hypotheses. Not given every year. Prerequisite, Course 21. *Three credit hours.*

71; 72. Higher Algebra.—Polynomials, determinants, matrices, invariants. Not given every year. Prerequisite, Course 8. *Three credit hours.*

71a; 72a. Higher Algebra.—The emphasis is on technique. Primarily for actuarial students. Not given every year. Prerequisite, Course 8. *Three credit hours.*

73; 74. Advanced Calculus.—Functions of real variables, infinite series, partial differentiation, multiple integration, line integrals, and other topics. Prerequisite, Course 8. *Three credit hours.*

75; 76. Projective Geometry.—Projective spaces, homogeneous coordinates, linear transformations. Not given every year. Prerequisite, Course 8. *Three credit hours.*

Given when there is sufficient demand: **2. Solid Geometry; 13. Spherical Trigonometry; 61. History of Mathematics; 65. Theory of Numbers; 66. Synthetic Projective Geometry; 109. Celestial Mechanics; 115. Theory of Functions of Real Variables; 116. Fourier's Series; 117. Theory of Groups; 119; 120. Differential Geometry; 121. Tensor Analysis.**

MODERN LANGUAGES AND CLASSICS

Professors Starr and Klein; Associate Professors Vigneras and Miles; Assistant Professors Arnold, Buzzell, Pellegrino, and Davis; Mr. Panunzio, Mr. Casavant, Mr. Glaude, Miss Avila, Miss Mengers; Mrs. Bragg

The Department offers major work to candidates for the Bachelor of Arts degree in the following fields of concentration: French, German, Spanish, Romance Languages, and Modern Languages in accordance with the requirements listed under the following sections.

Students, not concentrating in the Department, but who wish to be recommended for the teacher's certificate in French, should take French 33, 34, 57. 58, or 67. 68 and a minimum of one literature course.

The Department also offers work leading to the Master of Arts degree in French, Spanish, and in Romance Languages in terms of the general requirements for graduate work. In general, a program of courses up to 24 hours which does not duplicate undergraduate work will be selected from courses numbered 51 or above in the Advanced Courses section of the French and Spanish curricula listed below. Evidence of oral ability in the languages undertaken will be required. The thesis will be an essential aspect of the work and will be evaluated at no less than one fifth of the graduate program. The Summer Session catalog should be consulted for special aspects involved when the degree is sought through attendance at the Summer Sessions.

LATIN

1-2. Elementary Latin.—For students with little or no previous instruction in Latin. *Four credit hours.*

3; 4. Intermediate Latin.—Cicero in first semester, Vergil in second semester. For students who have completed Latin 1-2 or who have had two years

of Latin in high school. The completion of this course fulfills the language generalization requirement. *Three credit hours.*

5. 6. Latin Poetry.—Selections are read from the best-known poets of the Golden and Silver Ages. Prerequisite, Latin 4 or four (in some cases three) years of Latin in high school. *Three credit hours.*

Also given when there is sufficient demand: **Greek 1-2. Elementary Greek; 19. Homer; 51.52. Greek Poetry; Latin 7. 8. Elementary Composition; 9. Terence and Plautus; 10. Tacitus; 23. The Younger Pliny; 24. Horace.**

MODERN LANGUAGES

Fields of Concentration in French, German, or Spanish: Students electing to major in French, German, or Spanish will normally be required to take a minimum of three literature courses including the seminar (or Gm 71. 72 in the case of German) and eight hours of oral courses in the language chosen. *Note:* Majors in French who plan to teach in secondary schools may elect French 57. 58 in place of one of the literature courses.

Field of Concentration in Romance Languages: Students electing to major in Romance Languages will normally be required to take a minimum of four literature courses including at least one seminar and eight hours of oral courses (total hours to include courses in two of the Romance Languages).

Field of Concentration in Modern Languages: Students electing to major in Modern Languages will normally be required to take a minimum of four literature courses including a seminar or Gm 71. 72, and eight hours of oral courses (total hours to include one of the Romance Languages and German).

FRENCH

Basic Courses

1-2. Elementary French.—The basic principles of grammar and pronunciation with emphasis on functional vocabulary and oral practice. Designed to lay a strong foundation for the development of a practicable speaking as well as reading control of the language. For students who have had no French or whose previous training does not qualify them for a more advanced course. *Four credit hours.*

THE STAFF

3; 4. Intermediate French.—Designed to develop a reasonable achievement in the speaking and reading skills through grammar review, oral practice, and the reading of selected material from modern writers. For students who have completed French 1-2 or for freshmen prepared to continue at this level. Completion of this course fulfills the language generalization requirement. *Three credit hours.*

THE STAFF

7. 8. Elementary Oral French.—Drill in pronunciation and emphasis upon the acquisition of a practical vocabulary. Conversation practice. Open to students who have completed French 1-2 or the equivalent. May be counted toward fulfillment of major requirements. *Two credit hours.*

THE STAFF

7a. 8a. Additional Oral French.—Work in pronunciation, diction, intonation. Additional conversational practice. Individual corrective exercises and recordings. May be taken concurrently with Fr 7. 8 by students who wish further opportunity to develop oral skill. Recommended for prospective majors. *One credit hour.*

MR. CASAVANT AND STAFF

9. 10. Readings in French Literature.—Designed to develop substantial achievement in the ability to read French rapidly and easily as well as to acquaint the student with some of the masterpieces of French literature. For students in the department who may need further preparation for advanced work in the literature courses, for qualified students in other departments who desire to broaden their knowledge of literature, and for such entering freshmen as may be qualified to take a more advanced course than French 3; 4. May be counted toward fulfillment of major requirements with permission of Department Head. *Three credit hours.* THE STAFF

Advanced Courses

The following courses are conducted primarily in French and may be counted toward fulfillment of major requirements. See also Fr. 7. 8 and 9. 10.

33. 34. Advanced Oral French.—Designed to enable the student to achieve reasonable facility in the use of idiomatic French. For students who have completed Fr 7. 8, or who have attained adequate previous preparation through home environment and travel. *Two credit hours.* MR. VIGNERAS, MISS MENGERS

33a. 34a. Additional Advanced Oral French.—For students who wish to attain additional proficiency. Individual corrective exercises and recordings included. *One credit hour.* MR. CASAVANT AND STAFF

51. 52. Nineteenth Century French Novel.—The development of the modern French novel with emphasis upon the political, social, and cultural backgrounds. Lectures and readings of representative novels of Stendhal, Balzac, Flaubert, Maupassant, and others. For students who have completed French 9. 10, or who have completed French 3. 4 with honor grades. *Three credit hours.* MR. STARR

53. 54. Contemporary French Literature.—The works of leading twentieth century writers, with special attention to the novel and drama. Given in 1947-48 and alternate years. *Three credit hours.* MR. VIGNERAS

55. 56. French Theater Since 1800.—The development of the theater from the Revolutionary period to the present, with the reading and analysis of representative modern and contemporary French plays. Given in 1948-49 and alternate years. *Three credit hours.* MISS BUZZELL

57. 58. Background and Methods.—A course for prospective teachers. A study of French history, civilization, and geography in its relation to French literature and language followed by a critical study of textbooks, teaching aids, and methods of teaching modern languages. Given in 1947-48 and alternate years. *Three credit hours.* MISS BUZZELL

62. French-Canadian Literature.—Reading of representative works produced in Canada with a study of the background and literary trends. Alternates with French 53. 54. *Three credit hours.* MR. VIGNERAS

63. 64. French Classical Literature.—Representative literary works of the seventeenth century with emphasis upon Corneille, Racine, Molière. The course aims to develop an appreciation of the Classical spirit in the literature of *le grand siècle* and an understanding of the political and social forces which contributed to the development of cultural unity in France. Given in 1948-49 and alternate years. *Three credit hours.* MR. PELLEGRINO

67. Advanced Grammar.—The objective of this course is to give prospective teachers and others who plan to use French professionally a sound foundation in grammar and syntax. *Two credit hours.* MR. VIGNERAS

68. Cours de style.—Through emphasis on writing practice the student is taught how to express himself clearly and logically in living French. *Two credit hours.* MR. VIGNERAS

81. 82. Seminar.—The purpose of the seminar is to unify and coordinate the field of the major studies in order to develop a desirable perspective as preparation for the comprehensive examination required of each major student and to enable him to view his major work as a related body of knowledge and an integral part of the pattern of western civilization. Closely integrated lectures and discussions. Readings and reports. *Two credit hours.* MR. STARR

GERMAN

Basic Courses

1-2. Elementary German.—The basic principles of grammar and pronunciation with emphasis on functional vocabulary and oral practice. Designed to lay a strong foundation for the development of a practicable speaking as well as reading control of the language. *Four credit hours.* THE STAFF

3; 4 Intermediate German.—Designed to develop a reasonable achievement in the speaking and reading skills through grammar review, oral practice, and the reading of selected material from modern writers. For students who have completed German 1-2 or the equivalent. Completion of course fulfills the language generalization requirement. *Three credit hours.* THE STAFF

7. 8. Elementary Oral German.—Drill in pronunciation, and emphasis upon the acquisition of a practical vocabulary. Conversation practice. Open to students who have completed German 1-2 or the equivalent. May be counted toward fulfillment of major requirements. *Two credit hours.* MR. MILES, MR. GLAUDE

16. Scientific German.—Open only to students whose previous study of German will enable them to read scientific German with profit. Designed primarily to replace Gm 4 for pre-medical, pre-dental, and zoology major students. Completion of Course 3 and 16 fulfills the language generalization requirement. *Three credit hours.* MR. KLEIN

19; 20. German for Chemists.—A beginning course in German for students in the Colleges of Agriculture and Technology, and for students in the College of Arts and Sciences who intend to major in Chemistry. The reading matter is chiefly in chemical German with incidental stress upon grammar. *Three credit hours.* MR. KLEIN, MR. MILES

21; 22. German for Chemists.—Continuation of Course 19; 20, which is prerequisite. Should be taken by students who take Course 19; 20. *Three credit hours.* MR. KLEIN, MR. MILES

Advanced Courses

The following courses may be counted toward fulfillment of major requirements. See also German 7. 8.

33. 34. Advanced Oral German.—Designed to enable the student to achieve reasonable facility in the use of idiomatic German. For students who have had German 7. 8. *Two credit hours.* MR. KLEIN

51. 52. The Novel.—Critical reading of the shorter novels and longer *"Novellen"* of such authors as Goethe, Stifter, Storm, Meyer, Fontane, and Mann. Given in 1948-49 and alternate years. Prerequisite, German 3; 4 or the equivalent. *Three credit hours.* MR. KLEIN

55. 56. The Drama.—Reading and study of selected plays of some of the dramatists of the eighteenth and nineteenth century, such as Lessing, Schiller, Kleist, Hebbel, Hauptmann. Given in 1947-48 and alternate years. Prerequisite, German 3; 4 or the equivalent. *Three credit hours.* MR. KLEIN

61. 62. Goethe.—The life and work of Goethe, with a critical study of Faust. *Three credit hours.* MR. KLEIN

71. 72. Survey of German Literature.—Informal lectures, class reading of selections in standard anthologies, collateral reading. Given in 1948-49 and alternate years. *Three credit hours.* MR. KLEIN

The following courses are given when there is sufficient demand: **63. 64. Studies in Eighteenth Century Literature; 65. 66. Studies in Nineteenth Century Literature.**

ITALIAN

1-2. Elementary Italian.—The basic principles of grammar and pronunciation with emphasis on functional and vocabulary and oral practice. The course is designed to lay a strong foundation for the development of a practicable speaking as well as reading control of the language. Given when there is sufficient demand. *Four credit hours.*

3; 4. Intermediate Italian.—Designed to develop a reasonable achievement in the speaking and reading skills through grammar review, oral practice, and the reading of selected material from modern writers. Follows Course 1-2. *Three credit hours.*

52. Dante.—This course may be given in place of Italian 4 when there is sufficient demand. *Three credit hours.*

RUSSIAN

1-2. Elementary Russian.—The basic principles of grammar and pronunciation with emphasis on functional and vocabulary and oral practice. The course is designed to lay a strong foundation for the development of a practicable speaking as well as reading control of the language. Given in 1947-48. *Four credit hours.* MR. PELLEGRINO

3-4. Intermediate Russian.—Designed to develop a reasonable achievement in the speaking and reading skills through grammar review, oral practice, and the reading of selected material from modern writers. For students who have completed Russian 1-2 or the equivalent. Completion of course fulfills the language generalization requirement. Given in 1948-49. *Three credit hours.* MR. PELLEGRINO

SPANISH

Basic Courses

1-2. Elementary Spanish.—The basic principles of grammar and pronunciation with emphasis on functional vocabulary and oral practice. The course is

designed to lay a strong foundation for the development of a practicable speaking as well as reading control of the language. For students who have had no Spanish or whose previous training does not qualify them for a more advanced course. *Four credit hours.* THE STAFF

3; 4. Intermediate Spanish.—Designed to develop a reasonable achievement in the speaking and reading skills through grammar review, oral practice, and the reading of selected material from modern writers. For students who have completed Spanish 1-2 or for freshmen prepared to continue at this level. Completion of this course fulfills the language generalization requirement. *Three credit hours.* THE STAFF

7. 8. Elementary Conversation.—Drill in pronunciation, and emphasis upon the acquisition of a practical vocabulary. Open to students who have completed Spanish 1-2 or the equivalent. May be counted toward fulfillment of major requirements. *Two credit hours.* THE STAFF

7a. 8a. Additional Conversation Practice.—May be taken concurrently with Spanish 7. 8 by students who wish further opportunity to develop oral skill. Individual corrective exercises and recordings included. Recommended for prospective majors. *One credit hour.* MR. CASAVANT AND STAFF

9. 10. Spanish Prose Readings.—Designed to develop substantial achievement in the ability to read Spanish rapidly and easily as well as to acquaint the student with the work of representative Spanish writers. For students who wish further practice in reading before beginning more advanced literature courses. May be counted toward fulfillment of major requirements with permission of Department Head. *Three credit hours.* THE STAFF

Advanced Courses

The following courses are conducted primarily in Spanish and may be counted toward the fulfillment of major requirements. See also Spanish 7. 8 and 9. 10.

33. 34. Advanced Conversation.—Designed to enable the student to achieve reasonable facility in the use of idiomatic Spanish. For students who have completed Spanish 7. 8 or the equivalent. *Two credit hours.* MR. DAVIS

33a. 34a. Additional Advanced Conversation.—For students who wish to attain additional proficiency. Individual corrective exercises and recordings included. *One credit hour.* MR. CASAVANT AND STAFF

51. 52. The Spanish Novel.—Development of the Spanish novel from its earliest beginnings to the present time with emphasis on the modern period. Lectures, reading of important novelists, and reports. Given in 1946-47 and alternate years. *Three credit hours.* MISS ARNOLD

55. 56. The Spanish Theater.—Development of the theater from its origin to the present. Stress is placed on the *Siglo de Oro* and the Romantic Period. Lectures, readings of representative authors, and reports. Given in 1947-48 and alternate years. *Three credit hours.* MISS ARNOLD

59. 60. Commercial Spanish.—Presents letters from contemporary business concerns in Central and South America for study and translation into English, deals with typical problems facing the translator in the business office in the United States, and aims at giving the student the background and knowledge necessary to equip him to carry on correct, idiomatic commercial Spanish. Prerequisite, Spanish 3; 4 or the equivalent. Given when there is sufficient demand. *Two credit hours.* MR. PANUNZIO

61. 62. Spanish-American Literature.—Study of the literature of the colonial period, the period of the struggle for freedom, and that of modern times. Lectures, discussions, readings, and analysis of the work of important representative writers. *Three credit hours.* MR. GLAUDE

81. 82. Seminar.—The purpose of the seminar is to unify and coordinate the field of the major studies in order to develop a desirable perspective as preparation for the comprehensive examination required of each major student and to enable him to view his major work as a related body of knowledge and an integral part of the pattern of western civilization. Closely integrated lectures and discussions. Readings and reports. *Two credit hours.* MR. GLAUDE

MODERN SOCIETY

PROFESSOR KIRSHEN (Chairman); MR. ROMANYSHYN (Assistant Chairman), MR. ADRIANCE, MR. SEZAK, MR. WHITTEN, MISS WENTWORTH, MR. BAIER, MR. WICK, MR. WORTHINGTON, MR. STOTLER

Modern Society has two primary objectives: To understand contemporary society; and to develop a method of critical analysis.

1; 2. Modern Society.—An introductory course in the social sciences, the main purpose of which is to analyze and integrate the economic, political, and social problems of contemporary society. Specifically, the course includes organizations of government, business, and labor. It is concerned with social problems such as housing, public opinion, and race.

MUSIC

PROFESSOR SPRAGUE; MR. CAYTING, MR. SELWOOD, MR. SHAW

Music may be chosen as a major subject or as a broad elective. The Department offers a program that will develop a cultural asset in life or prepare for private music teaching or for teaching and directing in the preparatory school field.

Courses in Theory and Aesthetics

1; 2. Fundamentals of Music.—Notation and terminology, scales, intervals, chord structure, and the elements of musical design. For the layman as well as the student of music. No prerequisite. *Two credit hours.* MR. SELWOOD

3. 4. Music Appreciation.—The masterpieces of music analyzed and interpreted with a consideration of period tendencies and historical positions of composers. The evolution of form from the folk-song through the symphony. Lectures, illustrations, prescribed readings, reports. No prerequisite. *Two credit hours.* MR. SPRAGUE

5; 6. Introductory Harmony.—The fundamental structure of music composition, specifically the conditions under which tones sound together and move in combination. Prerequisite, a knowledge of notation. *Two credit hours.* MR. SPRAGUE

11. 12. Music in the Nineteenth Century.—Romanticism in musical art, particularly as reflected in the symphonic poem and Wagnerian music drama. Analysis of masterworks. Lectures, illustrations, prescribed readings, reports. No prerequisite. *Two credit hours.* MR. SPRAGUE

29; 30. Advanced Harmony.—Supplementary to Course 5; 6 and a con-

tinuation of the more advanced problems of tone combination. Harmonic analysis, including a brief survey of modernistic tendencies. Prerequisite, Course 5; 6. *Two credit hours.* MR. SPRAGUE

53; 54. Counterpoint.—The art of combining melodies, a correlative with Harmony as the material of composition. Analysis of masterworks. Composition projects. Prerequisite, Course 5; 6. *Two credit hours.* MR. SPRAGUE

55; 56. Orchestration.—A study of the constitution of the modern symphony orchestra. Practical scoring. Analysis of representative works through score-reading, phonographic records, and attendance at performances. Assigned readings in history and theory. Permission of the instructor required. *Two credit hours.* MR. SPRAGUE

77; 78. Form and Analysis.—The style, structure, and content of instrumental composition, as evidenced in typical works of the masters. The program consists of a progressive survey, culminating in the sonata and symphony. Prerequisite, a knowledge of harmony, counterpoint, and the fundamentals of orchestration. *Two credit hours.* MR. SPRAGUE

79; 80. Canon and Fugue.—Analysis of masterpieces in these forms, with particular concentration on the Canons of Klengel and the "Art of Fugue" of Bach. Composition projects in these polyphonic types. Prerequisite, a knowledge of harmony and counterpoint. *Two credit hours.* MR. SPRAGUE

81; 82. Free Composition Seminar.—Analysis of nationalistic and individual trends in composition and creative problems in the smaller forms. Prerequisite, a working knowledge of harmony and counterpoint and permission of the instructor. *Two credit hours.* MR. SPRAGUE

Courses in Ensemble Performance and Direction

25. 26. Chorus.—The study and performance of representative choral repertoire, with a consideration of the composers' creative aims and styles. The program includes the division of the chorus into separate men's and women's glee clubs. Audition required. *Three hours a week. One credit hour.* MR. SELWOOD

27. 28. Orchestra.—Orchestra ensemble, generally of symphonic order, similar to that of Course 25. 26. Audition required. *Two hours a week. One credit hour.* MR. CAYTING

Band is listed under Military Science and Tactics, Course 11. 12, and is open to both men and women students. MR. SHAW

Interpretation and Conducting.—Prerequisite, an assurance of aptitude and membership in the University Band, Chorus, or Orchestra. The subject presented in four phases, as follows:

****41. General Survey,*** covering the problems of time-beating, tempo-setting, and interpretation. *One credit hour.* MR. SPRAGUE

****42. Chorus Technique*** and its specialized problems. *One credit hour.* MR. SELWOOD

†***43. Orchestra Technique*** and its specialized problems. *One credit hour.* MR. CAYTING

†***44. Band Technique*** and its specialized problems. *One credit hour.* MR. SHAW

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*Offered in 1948-49 and alternate years.
†Offered in 1949-50 and alternate years.

Applied Courses

The University provides applied music instruction through an affiliation with the Northern Conservatory of Music in Bangor.

A maximum of eight hours of credit is allowed for applied music. Repetition of these courses is therefore permitted, with the requisite variation and progress in technical and literary material; but, generally, whatever number of hours is credited must be paralleled by at least an equal number of hours in music theory and aesthetics. Due to limited practice facilities, only music majors, students with special aptitude for music, or students who, by reason of their educational objectives, expect to have need for musical training in their future careers will be permitted to register for courses in applied music. The University provides, so far as possible, practice opportunity for students who desire to take applied courses without credit.

31. 32. Violin, Piano, Organ, Voice.—Private lessons. One hour lesson weekly, $60.00. *Two credit hours.* One-half hour lesson weekly, $30.00. *One credit hour.*

Many students schedule one hour weekly lessons, even though working for one credit hour, in order to have the advantage of added instruction from the teacher. This is advisable if the student is able to meet the expense.

33. 34. Instrumental and Vocal Ensemble.—Group lessons. One hour lesson weekly. Fee: duet, $30.00 per person the semester; trio, $20.00 per person the semester; quartet, $15.00 per person the semester. *One credit hour in each case.*

37. Orchestral Instrument Foundation Studies.—An introduction to the various types of orchestral instruments, with concentration upon position, tone-production, basic technique, and individual adaptability. For students expecting to conduct in school and community fields. Fee: Each instrument, nine lessons, $18.00. *One-half credit hour for each instrument.*

To meet further demands, instruction in the various orchestral instruments can be provided on a similar basis.

The practice requirements are one hour daily for five days each week for one credit, and two hours daily for two credits. The semester is fifteen weeks for applied music study. Practice facilities are provided on the campus.

For the use of the University instruments, a practice fee of $5.00 per semester is charged for the one-credit hour course, and $10.00 per semester for the two-credit hour course.

PHILOSOPHY

PROFESSOR LEVINSON; ASSOCIATE PROFESSOR VIRTUE

Philosophy may be defined as a resolute and rational effort to make out the ultimate meaning of the world and of man. It raises those great human questions which beset every thoughtful mind: how can we know and prove what is really true, good, beautiful, and how are the claims of these ideals to be adjusted to each other and to the demands of daily life?

While philosophy is ordinarily approached by way of a direct attack upon the fundamental problems (Pl 1. 2, and Pl 35, Pl 37), or through the history of man's attempt to solve them (Pl 55. 56), opportunity is offered to various classes of students to approach it from the standpoint of their major fields, Pl 65. 66.

1. 2. Philosophy and Modern Life.—A non-technical introduction to the

methods and major concepts of philosophy, showing how philosophy grows out of the actual concerns of life, and how the systematic analysis of experience, in turn, yields insights that make life more meaningful. *Three credit hours.*

MR. VIRTUE

35. Techniques of Thinking.—An analysis of effective thinking, including such topics as the nature of evidence, pitfalls of thinking, the structure of argument, syllogistic reasoning and scientific method. The course closes with an examination of responsible thinking in the consideration of social and cultural problems. *Three credit hours.* MR. VIRTUE

37. Ways of Life.—An account of the major moral ideals that Oriental and Western man have sought to live by, together with an attempt at their appraisal in terms of the ideal of One World. *Three credit hours.* MR. LEVINSON

51. Comparative Religion.—A study of the great living religions of the world—their founders and great teachers, their scriptures, their theological and ethical content, their contribution to culture and their relation to modern thought. *Three credit hours.* MR. VIRTUE

53. Man and the Social Order.—The nature of man and the intellectual, ethical, religious, social and cultural principles by which he creates and maintains a complex social order. An examination of the major problems confronting man and the resources at his disposal for dealing with these problems. *Three credit hours.* MR. VIRTUE

55. 56. History of Philosophy.

(1) 55. ***Ancient Philosophy.***—The antecedents and first beginnings of philosophy among the Greeks. The major thinkers: Socrates, Plato, Aristotle. Later rival philosophies of life: Epicurean, Stoic, Sceptic. The final phase: the revival of Platonism and its conflict with insurgent Christianity.

(2) 56. ***Medieval and Modern Philosophy.***—Catholic philosophy, from St. Augustine to St. Thomas Aquinas. The birth of modern science and the consequent rise of philosophical systems from Bacon and Descartes to Kant and his successors. Philosophies of History and Evolution, from Hegel and Comte to Bergson, James, and Dewey. Contemporary trends. Prerequisite, Pl 1 or Pl 55, or, in exceptional cases, the consent of the instructor. *Three credit hours.*

MR. LEVINSON

65. 66. Topics in Philosophy.—Individual study related to the student's major interest. Prerequisite, junior standing and either three hours in philosophy or the consent of the instructor. *Two or three credit hours.* MR. LEVINSON

PHYSICS

PROFESSOR BENNETT; ASSOCIATE PROFESSORS CROFUTT AND BISCOE; ASSISTANT PROFESSOR OLESON†; MR. COFFIN, MR. TODD, MR. MAXIM

Fundamental training, which is adequate for secondary school teaching, is provided by courses Ps 1; 2 or 1a; 2a and 17. 18. Following this two-year program in general physics, a suitable number of the more advanced courses, supplemented with mathematics and chemistry, will prepare a student for minor positions in the profession, or for the graduate training necessary for the higher positions.

For the intelligent layman who wishes some knowledge of the physical world in which he lives, courses of the more descriptive variety are also offered (Ps 3, Ps 10).

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† At Brunswick.

1; 2. General Physics.—The fundamentals of mechanics, matter, sound, heat, electricity, magnetism, light, and modern physics. The course meets the needs of engineering, pre-dental, and pre-medical students. *Two lectures, two recitations, and one two-hour laboratory period a week. Five credit hours.*

MR. BENNETT AND STAFF

1a; 2a. General Physics.—The fundamentals of mechanics, sound, heat, electricity, magnetism, light, and modern physics. This course satisfies the pre-medical and pre-dental requirements. Two lectures and two two-hour laboratory periods a week. Same lectures as Ps 1; 2 but modified laboratory program with less emphasis on computations. *Four credit hours.*

MR. BENNETT, MR. TODD, MR. MAXIM

3 (4). Descriptive Physics.—For the non-science student. A treatment in non-mathematical language of the more important topics in physics designed to develop an appreciation for the concepts, vocabulary, and methods of the science rather than a false sense of mastery. *Three lectures a week with demonstrations. Three credit hours.*

MR. BENNETT

10. Meteorology.—The earth's atmosphere, composition, and movements. Atmospheric conditions accompanying changes in weather, and weather predictions. Air-mass analysis. The course may be followed by Course 61. *Three hours a week. Three credit hours.*

17. 18. Intermediate Physics.—A more mathematical treatment of many of the topics in Course 1; 2 which is a prerequisite. (With special permission, students may register for this course under the number Ps 17a. 18a without laboratory for *three credit hours.*) *Two lectures, one two-hour computation, and one two-hour laboratory period a week. Four credit hours.*

MR. BENNETT, MR. BISCOE, MR. TODD, MR. COFFIN

21 (22). Mechanics and Heat Laboratory.—An intermediate laboratory course primarily for students in Engineering. Fundamental experiments in measurements, statics, dynamics, and heat with more emphasis on precision and technique than in Ps 1; 2. Prerequisite, Course 1; 2. *Four hours a week. Two credit hours.*

MR. COFFIN

32. Photography.—Fundamental theories and techniques. For the scientist and the amateur. Construction and use of various types of cameras, lenses, exposure and exposure meters, emulsions, filters, artifical lighting and copying, contact and projection printing, dark-room practice. *Two lectures and one two-hour laboratory period a week. Three credit hours.*

MR. CROFUTT

50. Problems in Physics.—An undergraduate thesis project ordinarily of an experimental nature. *One to three credit hours.*

THE STAFF

Course 17. 18 or the equivalent and the calculus are prerequisite for the following advanced courses.

53. Electrical Measurements.—A laboratory course covering theories and practices in the measurement of electrical and magnetic quantities. Laboratory, *four hours a week. Two credit hours.*

MR. CROFUTT

55. Electricity and Magnetism.—Fundamental aspects of electrostatics, magnetism, electromagnetic phenomena, direct and alternating currents. *Three credit hours.*

MR. CROFUTT

58. Mathematical Physics.—Not given every year. *Three credit hours.*

59. Sound.—Not given every year. *Three credit hours.*

61. Advanced Meteorology.—A more theoretical treatment than Course 10 which is prerequisite. Satisfies the meteorology requirement for government service. Not given every year. *Three credit hours.*

62. Heat and Thermodynamics.—Theoretical thermodynamics as applied to the measurement of temperature, specific heat, thermal expansion, conduction, convection, radiation, change of state. *Three credit hours.* MR. BISCOE

66. Electronic and Thermionic Phenomena.—Thermionic and photoelectric emission, electron optics, and other electronic phenomena. Applications of theory to the design of vacuum tubes. Not given every year. *Three credit hours.*

69. Modern Physics.—Electron and nuclear physics, atomic structure, X-rays, spectra. *Three credit hours.* MR. BISCOE

72. Optics.—A practical study of geometric optics as applied to optical instruments. Some attention is also given to physical optics and optical phenomena generally. *Three credit hours.* MR. BENNETT

76. Physical Measurements.—Laboratory course in which experiments are not restricted. *Four hours a week. Two credit hours.*

81. 82. Advanced Laboratory Physics.—Selected advanced experiments and projects in the field of Physics, including electronics and optics. Opportunity is given to develop original ideas and to construct apparatus. Departmental approval required. *Credit arranged.* MR. CROFUTT, MR. BISCOE

98. Physics Seminar.—Topics recently considered include quantum mechanics, statistical mechanics, nuclear physics, and band spectra. *Credit arranged.* MR. BENNETT

101. 102. Special Laboratory.—An original investigation. *Credit arranged.* THE STAFF

125. Graduate Thesis.—*Credit arranged.* THE STAFF

GRADUATE WORK IN PHYSICS

The degree of Master of Science is offered in Physics. See pages 201-205 for detailed requirements. Although students graduating from this department are usually encouraged to do their graduate work elsewhere to broaden their outlook, an opportunity is afforded to outstanding graduates of smaller institutions to supplement their background with courses of a fundamental nature. In each case a program of courses is developed around an original investigation, the results of which are embodied in a thesis. Research facilities are available in such fields as optics, electricity, molecular physics and electronics, with special reference to optical properties of gases at high pressure, X-ray studies of molecular structure, and electronic circuits. Usually one or more graduate assistantships are available in this department.

PSYCHOLOGY

Professors Dickinson and Brush; Associate Professor Glanville*;
Assistant Professor Quinsey; Mr. Leach, Mr. Seidman,
Mr. Sopchak; Mrs. Goldsmith, Mrs. Webster,
Mr. Goetschius

Psychology includes a study of mind and of modes of behavior. Through a study of the child, the normal adult, and the abnormal individual, it enables the student to gain an insight into personality development and the problems of human adjustment. Through experience with psychological tests and the techniques of testing, he comes to a more practical understanding of intelligence.

The Department of Psychology offers a counseling service for students in the College of Arts and Sciences, for others by special request.

Course 1; 2 is prerequisite for all advanced courses in the department.

Candidates for the Master of Arts degree in psychology will be expected to have taken at the undergraduate level several courses in psychology. It is recommended that before beginning their graduate work in psychology candidates acquire a background in the biological sciences, sociology, and statistics. A reading knowledge of at least one foreign language is desirable.

Graduate students who have not previously had a laboratory course in experimental psychology will be required to take Py 69; 70, as an aid in acquiring techniques of psychological research needed in the preparation of the thesis.

Psychology 0. The Technique of Effective Reading.—An analysis of the student's reading habits followed by an intensive program of training designed to increase reading efficiency. Two laboratory periods a week. *No credit.*

Mr. Quinsey

1; 2. General Psychology.—Learning, intelligence, personality, motivation, etc., and a brief discussion of some of the special fields of psychology: applied, child, social, abnormal. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.* The Staff

3. Applied Psychology.—Applications to industry, business, advertising, salesmanship, and other fields. Psychological methods and tests in the selection and training of workers. Open only to Mechanical and Civil Engineering students. *Two credit hours.* Mr. Brush

5. Applied Psychology.—For three-year nurses. *Two credit hours.*

Mr. Dickinson

12. Advertising and Selling.—Principles of advertising and selling. Supplementary lectures by visiting experts when possible. Prerequisite, Course 1 and enrollment in Course 2. Course 12 may not be substituted for Course 2. *Three credit hours.* Mr. Dickinson

66. Educational Psychology.—Designed to give the student a better understanding of the facts and principles of psychology as they apply to education. Social, emotional, intellectual development. Learning; its nature and control, effects on attitudes, interests, transfer of training. *Three credit hours.* Mr. Quinsey

67. Psychology of Childhood.—The child to twelve years. Native equipment, environmental influences, development of behavior patterns, speech, judgment, etc. Experimental techniques in child study. Demonstrational motion pictures.

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* Acting Head of Department.

Prerequisite, Course 1; 2 with a grade of C or better. *Three credit hours.*
MR. DICKINSON

68. Psychology of Adolescence.—Growth and development, physical, intellectual, emotional, and social. Adolescent personality and problems of adjustment. *Two credit hours.* MR. BRUSH

69; 70. Experimental Approach to Psychological Problems.—First semester, techniques and objective approach to problems; second semester, techniques applied to practical problems, planning and conducting an original investigation by the student, and quantitative and statistical treatment of psychological data. *Three credit hours.* MR. GLANVILLE

71. 72. Abnormal Psychology and Mental Hygiene.—Mental abnormalities and the normal mentality, studied with a view to understanding educational practice and problems of human adjustment. Dr. C. J. Hedin, superintendent, conducts five clinics at Bangor State Hospital on Tuesday afternoons, two until four o'clock. For dates see time schedule. Attendance required. Prerequisite, Course 1; 2 with grade of C or better. *Three credit hours.* MR. DICKINSON

73. 74. Child Study Laboratory.—Observation and study of a group of pre-school children. Individual projects, supplemented by readings and class discussions. Opportunity to assist in guiding the children's activities. Laboratory, *hours arranged. Two or three credit hours.* MR. BRUSH

75. Social Psychology.—The development of social behavior in different cultures; motivation, emotions, learning, attitude and language as aspects of social phenomena; the psychology of the crowd, the audience, fashion, leadership, propaganda, and public opinion; prejudice and group conflict; current social movements. *Three credit hours.* MR. QUINSEY

77. The Psychology of Personality.—Consideration of the various current approaches to the study of personality, its development and relation to biological and social factors. Analysis, structure, organization, and measurement of personality. *Two credit hours.* MR. BRUSH

81. Mental Measurement.—Intensive training in the administration of individual mental tests, with emphasis on the Revised Stanford-Binet Scale. Historical background and current problems in the theory and practice of testing. Prerequisite, permission of instructor. *Four credit hours.* MR. BRUSH

82. Clinical Psychology.—Training in the use and interpretation of psychological tests and related methods as applied in a clinical setting. A study of the work of the clinical psychologist in such organizations as mental hygiene, child guidance and court clinics, and in institutions for the mentally abnormal and defective. Prerequisite, Py 81. *Four credit hours.* MR. GLANVILLE

83. Comparative Psychology.—Development of the animal mind from lower to higher forms of life. Learning, higher mental processes, and social life as they occur in the animal are considered. *Three credit hours.* MR. QUINSEY

84. Aptitude Testing.—The use and interpretation of psychological tests and related techniques in vocational guidance and vocational selection. Occupational description and classification. Applications in such fields as business, industry and education, and in the public agencies. *Three credit hours.* MR. QUINSEY

91. 92. Problems in Psychology.—Primarily for graduate students and seniors with grade of B or better. Opportunity to select and attack particular psychological problems under guidance. Admission by consent of instructor. *Credit hours arranged.* MR. GLANVILLE AND STAFF

93. 94. Seminar in Psychology.—For graduate students and other qualified persons. Successive semesters include history of psychology; systems and schools of psychology; current psychological literature; etc. Required of all psychology majors; prerequisite for others, permission of instructor. *Two credit hours.*

MR. LEVINSON, MR. DICKINSON

125. Graduate Thesis.—*Credit arranged.* THE STAFF

RELIGION

MR. O'CONNOR

Gc 3. 4. Religion and Modern Life.—The origin and development of the three major faiths in American Democracy with special attention to historical and contemporary conflicts in religious thinking. *Two credit hours.*

SPEECH

PROFESSOR RUNION; ASSISTANT PROFESSOR BRICKER; MISS DUMAIS, MR. GARDNER, MRS. STEVENS, MRS. WILLIAMSON, MR. WOOLLEY

Within the department it is possible to plan either a Speech or a Theatre major, thus emphasizing the phase of work of interest to the student. The student is advised, however, to have a broad general background in speech, especially if he desires to teach this subject in the high school.

For all majors, oral and written comprehensive examinations are required.

Basic courses required of all majors are Sh 1, Sh 3, Sh 7, and Sh 15.

In order to receive departmental recommendation, students who offer speech as a minor teaching subject are required to have the four basic courses required of all majors.

Courses in Speech, Radio, Debate

0. Speech Correction.—Open to students with speech defects. Largely individual instruction. *No credit.* MR. RUNION

1 (2). Public Speaking.—The organization and delivery of prepared speeches; practice in short extemporaneous talks. Each student will have a recording made of his speech. *Two credit hours.* THE STAFF

3 (4). Debate.—Study of debate technique with special emphasis on logic and fallacy. Students expecting to do advanced work in Debate should elect this course early in their college career. Open to freshmen. *Three credit hours.*

MR. GARDNER

5 (6). Persuasive Speech.—Continuation of Course 1 with emphasis on persuasion through study of composition, logic, and argument. Extemporaneous speeches. Prerequisite, Course 1 (2). *Two credit hours.* THE STAFF

7. Interpretative Reading.—The oral presentation of selections from prose, poetry, and drama; Choral Reading and Program Reading. This course is recommended to the teacher of English who may wish to improve his oral interpretation of literature. *Two credit hours.* MRS. STEVENS

8. Program Reading.—A continuation of Course 7 with emphasis upon program building. Prerequisite, Course 7 or permission of instructor. *Two credit hours.* MRS. STEVENS

12. Parliamentary Law.—The class organizes as a parliamentary society, constructing and adopting a constitution and by-laws. Each student has an opportunity to preside. *One credit hour.* MR. RUNION

19. 20. Advanced Debate.—For the student who wishes to direct or teach debating, or take part in intercollegiate debate. An individual program is worked out for each student. Prerequisite, four hours in speech courses or permission of the instructor. *One credit hour.* MR. GARDNER

21 (22). Radio Speaking.—Effective radio speaking, with emphasis on voice, diction, and enunciation. Analysis of current radio programs; the writing of radio scripts, sports, news, and commercial copy. Participation in radio programs broadcast from the campus studios. Prerequisite, Course 1, or permission of instructor. *Two credit hours.* MRS. WILLIAMSON

42. Pre-Legal Speaking.—Primarily for those who plan to study law. Courtroom procedure is followed. Each student acts as prosecuting and defense attorney, judge, and witness. Legal briefs are prepared. Observation of the circuit court in Bangor. Prerequisite, Course 1 (2). Given in 1947-48 and alternate years. *Three credit hours.* MR. RUNION

43 (44). Advanced Radio Speaking (Techniques of Radio Broadcasting).—A continuation of 21 (22). Production, program planning, writing, advertising, drama, journalism, and education in radio. Prerequisite, Course 21 (22), or permission of instructor. *Two credit hours.* MRS. WILLIAMSON

46. Advanced Public Speaking.—The presentation of several longer speeches leading to the making of a forty-five minute address. A review and study of contemporary speeches. Prerequisites, Course 1 (2) and 5 (6). *Two credit hours.* MR. RUNION

52. Voice and Diction.—Improvement of the voice and training in distinguishing correct and defective sounds through the use of phonetic symbols. Prerequisite, Course 1 (2) or 7. Given in 1946-47 and alternate years. *Two credit hours.* MR. RUNION

59. Theory of Speech Composition.—Historical and critical survey of rhetorical theory from Aristotle to the present time with particular attention to Aristotle, Cicero, and Quintilian. Open to juniors and seniors. *Three credit hours.* MR. RUNION

67. Speech Pathology.—The symptoms, causes, and treatments of speech disorders. Stuttering, articulatory defects, and aphasia are included. Open to juniors and seniors. *Three credit hours.* MR. RUNION

70. Teaching of Speech.—Consideration of teaching problems and technique with special emphasis on the speech program in the secondary schools. Supervision of extracurricular activities in speech. Open to juniors and seniors or by permission. Given in 1947-48 and alternate years. *Three credit hours.* MR. RUNION

79. Seminar in Speech and Theatre.—Required of all majors. The purpose of the seminar is to unify and coordinate the work of the major studies in preparing for the comprehensive examination required of each major student. Informal lectures, discussions, readings, and reports. *Two credit hours.* THE STAFF

105-106. Problems in Speech.—For graduate students and other qualified persons. Individual study of particular problems in speech under guidance. Admission by consent of instructor. *Two credit hours.* MR. RUNION

125. Graduate Thesis.—*Credit arranged.* MR. RUNION

Courses in Theatre

The Maine Masque Theatre presents four major productions each year. All theatre majors are expected to participate in these productions, using the Theatre as a practical training ground. This work is supplementary to the regular course requirements, and no credit is given.

All undergraduate students in the University are eligible to read for plays to be produced and may participate in the other departments of the Theatre.

The following are open to all University students.

9 (10). Theatre Appreciation.—A survey of the contemporary theatre, including both the professional and non-professional styles of theatre productions, dramatic theory and criticism. Required of theatre majors. *Two credit hours.*

MR. BRICKER

15; 16. Play Production.—A course emphasizing all aspects of play production, including fundamentals of acting, stagecraft, make-up, and directing. Open to all undergraduate students. *Three credit hours.* MR. BRICKER

28. Scene Designing and Lighting.—Principles of scene designing and lighting and set designing. Lectures and exercises. Prerequisites, Course 15 (16) and Md 1. *Two credit hours.* MR. BRICKER

30. Acting.—Acting technique. A practical approach to creating a role. Play rehearsing. Public recitals for students who have attained a sufficient degree of technique. Prerequisite, Course 15. *Four hours a week. Three credit hours.*

MR. BRICKER

32. Costume.—Costume designing for play characters. Conference and laboratory. Prerequisite, Course 28. *Two credit hours.* MR. BRICKER

37. 38. a-g. Theatre Laboratory.—Limited to majors in the department. Advanced work in one or more of the following divisions:

37a. 38a. Acting.	***37b. 38b. Designing.***	***37c. 38c. Costuming.***
37d. 38d. Lighting.	***37e. 38e. Directing.***	***37f. 38f. Make-up.***
37g. 38g Radio.		

Students are not permitted to take more than six hours of work in this course. Permission of instructors. Two credit hours. THE STAFF

39. 40. Stage Directing.—The principles of stage directing, both theory and practice. Permission of instructor. *Three credit hours.* MR. BRICKER

48. Stage History.—History of the stage from the days of the Greeks to the present, with special emphasis on the English and American stage. Lectures, discussions, readings, and special reports. *Two credit hours.* MRS. STEVENS

The attention of theatre majors is called to the courses in Design and Costume in the Home Economics Department, those in Drafting in the Department of Engineering Drafting, and those in the Modern Dance in the Department of Physical Education.

ZOOLOGY

PROFESSORS SPEICHER AND MURRAY; ASSISTANT PROFESSORS FLYNN AND MEYER;
MR. STALLWORTHY, MISS HEPPEL; MR. EASTON, MRS. HADLEY,
MRS. MARSHALL, MISS SMITH

Zoology is the branch of biological science which deals with animal life. A knowledge of the general principles of zoology is prerequisite to an understanding

of the relationships which exist between man and his natural environment, and serves as a basis for the study of the mental and social side of human behavior.

The Department offers curricula which satisfy the requirements for admission to graduate, medical, dental, medical technology, and nursing schools.

Either Zoology 1 and Botany 1, or Zoology 3; 4 are prerequisite to all advanced courses in the department.

1. General Zoology.—A one-semester course. Fundamental principles illustrated by laboratory studies mainly on the vertebrates. Designed for students in the College of Agriculture. Repeated each semester. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. FLYNN AND ASSISTANTS

3; 4. Animal Biology.—A two-semester course. The types and principles of animal life, supplemented by laboratory exercises. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.*

MR. SPEICHER, MR. MEYER, AND ASSISTANTS

9. Ichthyology.—The characteristics of fishes, their life histories and economic importance, with emphasis on fresh-water species. Lectures, supplemented by laboratory study and dissection. Classroom, *two hours a week;* laboratory, *four hours a week.* Not given in 1947-48. *Four credit hours.*

10. Ornithology.—The characteristics of birds, their life histories and economic importance. Lectures, laboratory study of skins and mounted specimens, and field identifications. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. KUTZ

11. Anatomy and Physiology for Nurses.—The general principles of animal life, emphasizing the structure and functions of the human body. Restricted to three-year student nurses. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. STALLWORTHY AND ASSISTANTS

12. Anatomy and Physiology.—The general principles of animal life emphasizing the structure and functions of the human body. Classroom, *three hours a week;* laboratory, *two hours a week. Four credit hours.*

MR. STALLWORTHY AND ASSISTANTS

12a. Anatomy and Physiology.—The general principles of animal life, emphasizing the structure and functions of the animal body. For students majoring in Liberal Arts and Nursing. Classroom, *three hours a week;* laboratory, *four hours a week. Five credit hours.* MR. STALLWORTHY AND ASSISTANTS

14. Mammalogy.—The characteristics of mammals, their life histories and economic importance. Lectures supplemented by laboratory study and dissection. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.*

MR. MURRAY

15. Comparative Anatomy.—The structure, origin, and history of the vertebrate organ-systems. Prerequisite, Zoology 1 and Botany 1 or Zoology 3; 4, passed satisfactorily. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. FLYNN AND ASSISTANTS

18. Vertebrate Embryology.—The development and formation of tissues, organs, and organ-systems in vertebrates. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. FLYNN AND ASSISTANTS

19. Fish Management.—Modern methods of fish management including propagation and distribution, fisheries legislation, biological surveys, and environmental improvements. Prerequisites, Zoology 9 and Entomology 26. Lecture, *two hours a week;* laboratory, *four hours a week.* Not given in 1947-48. *Four credit hours.*

21. Invertebrate Zoology.—The morphology, physiology, life histories, phylogenetic relationship, and economic importance of invertebrates exclusive of insects. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. MEYER

22. Animal Parasitology.—The identification, life histories, economic importance, and methods of control of animal parasites, especially those of man and game animals. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. MEYER

37; 38. General Physiology.—The physico-chemical aspects of life and the integrative factors in higher animals. Prerequisites, two years of chemistry, one year of physics, one year of biology. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. STALLWORTHY

41. Histology.—Microscopic anatomy of animal tissues and methods of preparing microscopic slides. Classroom, *two hours a week;* laboratory, *four hours a week. Four credit hours.* MR. SPEICHER AND ASSISTANTS

47. 48. Problems in Zoology.—Open to juniors and seniors who have special interest and qualifications in some branch of zoology. Admission by permission of the instructor concerned. *Credit arranged.* THE STAFF

55. 56. Zoology Seminar.—A consideration of the current literature. Required of all senior majors and graduates majoring in zoology. *One credit hour.* THE STAFF

66s. Marine Invertebrate Zoology.—A six weeks' summer course given at the University of Maine Biological Laboratory at Lamoine (see page 106). Lectures, laboratory work, and semi-weekly field trips cover the form, function, life history, classification, and habitats of living salt water invertebrates. A descriptive pamphlet is available upon application to the Director. *Six credit hours.*

MR. MURRAY, MR. SPEICHER, AND ASSISTANTS

Opportunity is given for graduate work in the various phases of zoology. Students with adequate preparation may register for the following courses with credit arranged.

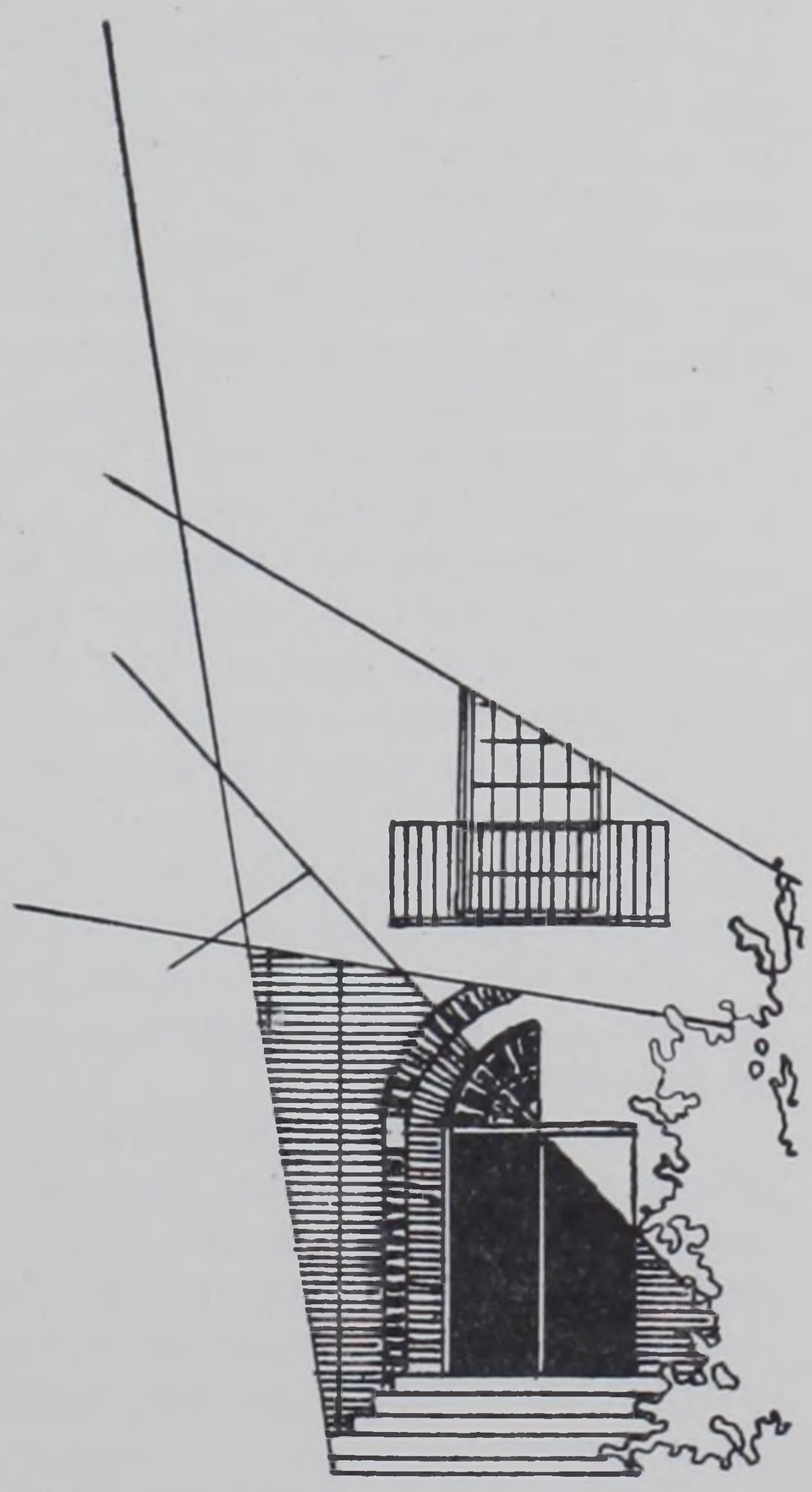
105. 106. Problems in Zoology.

111. 112. Problems in Physiology.

109. Ichthyology; 110. Ornithology; 114. Mammalogy; 115. Anatomy; 118. Embryology; 119. Fish Management; 121. Invertebrate Zoology; 122. Parasitology; 137-138. Physiology; 141. Histology.

125. Graduate Thesis.

SCHOOL OF EDUCATION



MARK R. SHIBLES, DEAN

School of Education

The School of Education offers professional training to secondary teachers, superintendents, principals, and supervisors: Students will ordinarily enter with junior standing, having had the first two years of work in either a liberal arts college, normal school, or teachers college. Those with a different type of training may enter as special students until junior standing is attained.

ADMISSION

Students who plan to enter the teaching profession and who transfer to the University at junior standing, or above, should enroll directly in the School of Education.

Students in other Colleges of the University

A. **Students in the College of Arts and Sciences.**—Students entering the University below junior standing, and who expect to prepare for teaching, should enroll in the College of Arts and Sciences taking the courses designed to lay a foundation for a broad cultural education and a field of concentration. A course in General Psychology should be included. Each student who expects to teach should also register in the office of the Dean of the School of Education at as early a date as the decision is reached, consulting with him on the program of study.

Transfer to the School of Education should generally be made at the beginning of the junior year.

B. **Students in the Colleges of Agriculture and Technology.**—Students in the colleges of Agriculture and Technology who desire to change their field of vocational interest, and to prepare for teaching, may be accepted for transfer to the School of Education. This does not apply to students who are preparing to teach in agriculture or home economics.

When students from other Colleges of the University are admitted to the School of Education, work previously completed will be accepted in so far as it fits into the proposed program in the School of Education.

These students will receive the degree of Bachelor of Arts in Education, or Bachelor of Science in Education on the completion of their program in the School of Education.

Students in Normal Schools and Teachers Colleges.—Students in the normal schools and teachers colleges who wish to qualify for the Maine secondary-school teacher's certificate should plan to transfer to the University at the end of their second year of work. Such students who rank in the upper half of their class and are recommended by the institution may be admitted to the School of Education with full junior standing, and may be graduated on the satisfactory completion of two years of work.

Graduates of the three-year courses in normal schools, who rank in the upper half of their classes and are recommended by the institution, may be admitted to the School of Education with senior standing, and may be graduated on the satisfactory completion of one year of work. This program will not qualify one for the secondary-school teacher's certificate. It is ordinarily restricted to elementary

school teachers, supervisors, and administrators of experience who plan to remain in the elementary school field.

Students with three years of work in normal schools and teachers colleges who desire to obtain a secondary-school teacher's certificate should plan to spend two years in the School of Education before they take their Bachelor's degree.

All students from normal schools or teachers colleges will be expected to meet the requirements of a field of concentration in academic subjects. Those students whose primary interest is in elementary school work may be permitted to have their field of concentration in Education and Psychology.

Normal school and teachers college students who are interested in entering the School of Education should request the institution to send a transcript of their record, together with a statement giving their class rank to the Director of Admissions of the University. These should be accompanied by a recommendation of the candidate by the Principal or President, indicating satisfactory qualifications essential for affiliation with the University.

Summer Session, Correspondence, and Extension Class Students.—Students whose only work to date in the School of Education has been, and those whose first work in the School of Education will be, in the summer session, by class extension, or by correspondence, are strongly urged to apply for admission to the University exactly as they would if they expected to enroll for resident work during the regular school year. This recommendation applies both to students who expect to work for a degree in the School of Education and also those who have not yet fully decided on the matter.

Among the advantages which come to a student by reason of being admitted to the University are: Immediate assignment of a major adviser to counsel on registration, requirements, etc.; eligibility for guidance and counseling service; somewhat different application of regulations relative to maximum amount of extension credit. Students who expect their first work to be in the summer session should apply prior to their first registration; students whose first work is to be by class extension should apply during their first extension course.

Application for admission should be made directly to the Director of Admissions, University of Maine. (See sections immediately above.)

Commercial Education.—An arrangement has been made with the State Department of Education whereby graduates of the teacher-training departments of approved commercial schools may receive appropriate credit toward the degree of Bachelor of Science in Education (Commercial).

The special curriculum in commercial education at Westbrook Junior College has been approved whereby graduates of this course may transfer to the University and receive appropriate credit toward a degree in this field.

Art Education.—Students who complete an approved three-year curriculum in the Portland School of Fine and Applied Art and the Westbrook Junior College may transfer to the University with full credit and complete a curriculum which leads to the degree of Bachelor of Science in Education (Art).

Music Education.—Students who complete an approved two-year curriculum at the Northern Conservatory of Music in Bangor may transfer to the University with appropriate credit and complete in two years a curriculum which leads to the degree of Bachelor of Science in Education (Music).

Physical Education.—Students who have completed the first two years of the professional training curriculum in Physical Education in the College of Arts

and Sciences, or its equivalent elsewhere, will transfer to the School of Education for their last two years. Upon graduation, such students will be eligible for the State certificate in Physical Education—Professional Grade. In addition, these students may, by careful selection of elective courses, meet the requirements for a regular secondary-school certificate.

Students who are not majors in Physical Education may elect a minor in the field and thereby meet the requirements for a State certificate in Physical Education—Non-professional Grade.

GUIDANCE SERVICE FOR STUDENTS

A guidance and testing service is provided for all students enrolled in the School of Education. This service is briefly described below.

Testing.—Students admitted to the School of Education will be expected to take a series of tests, either prior to or immediately after their first registration in a regular session. These tests will cover general scholastic ability and achievement in broad academic fields. In addition, tests, scales, and inventories in such areas as personality, interests and aptitudes, will be available for those students who desire this service.

The results of these tests will be made known to the individual student through his adviser. These test results will be used by the adviser as a basis for counseling.

Guidance.—Immediately upon admittance to the School of Education each student is assigned a staff member to act as his major adviser. The major adviser will assist the student in the selection of a field of concentration, advise with him on the selection of specific courses, check registration and graduation requirements and counsel him on his plans for work after graduation.

GRADUATION REQUIREMENTS

The equivalent of 125 semester hours of college work, exclusive of credit for basic military training, is required for graduation. In addition, each student must accumulate a total of "grade points" equal to the number of hours required for graduation. Grade points are computed by multiplying each hour of the letter grade by a factor as follows: A by 3, B by 2, C by 1, and D, E, F, by 0.

Approximately 24 hours will be required in Education and Psychology, and 40 to 50 hours in the field of concentration, all of which must be carried with a grade of C or better.

Professional Subjects Required.—Students whose work before entering the School of Education has been at the University of Maine shall include the following in their programs:

Py 1; 2—General Psychology (preferably in sophomore year)
Ed 35; 36—Educational Foundations (preferably in junior year)
Ed 45; 46—The Curriculum, Teaching and the Evaluation of Instruction (preferably in senior year)

In addition, each such student will elect, with the approval of his adviser, a minimum of 6 additional hours in Education.

Students whose work before entering the School of Education has been at an institution other than the University of Maine, will be expected to complete the above requirements, or their equivalent.

Students who are candidates for degrees in Commercial Education, Art

Education, Music Education, or Physical Education, will follow the curricula specified for these fields. Information in respect to these curricula may be obtained from the office of the Dean.

Besides these specific requirements in strictly professional subjects, students will be strongly advised to take general courses in a number of subjects of vital importance as a part of the background of any teacher or educator.

Field of Concentration.—In order better to meet the needs of the typical high-school situation, the traditional requirement of a single major subject is replaced by that of a field of concentration in the academic subjects. This field of concentration must include a minimum of 40 to 50 semester hours basic to a group of related subjects commonly taught in the secondary schools, the exact amount to depend on the number and character of the subjects combined, and the quality of the work done. This work must be carried with a grade of C or better in order to qualify one for a degree in Education, and must be acceptable to the heads of the departments in which it is taken.

The requirement of a field of concentration applies to all students in the School of Education. However, those students who are candidates for degrees in commercial, art, music, and physical education will use these special areas for their field of concentration. In addition, students with teaching experience who plan careers in administrative or supervisory work or in elementary school teaching may be permitted to carry their field of concentration in Education and Psychology.

Combinations of subjects which occur frequently in the secondary schools are: English and foreign languages, English and history or the social studies, mathematics and the sciences. In addition to their regular subjects, teachers generally participate in the direction of student activities such as music, debating, dramatics, clubs, and games. Each student in the School of Education should develop some proficiency in at least one of these fields.

RESIDENCE REQUIREMENT

A minimum of thirty semester hours of credit must be earned while in residence at the University to qualify a candidate for a degree. This requirement may be met by one academic year of residence, or in case of teachers by attendance in summer sessions. In either case, this requirement must be met after the student has become a candidate for a degree in the School of Education.

Exceptions to these rules will not be permitted except by a vote of the faculty.

A maximum of sixteen semester hours may be earned toward a degree by extension work, of which not over eight hours may be taken by correspondence. The amount permitted will be in proportion to the number of hours of credit required to complete the degree after the student enrolls in the School of Education.

DEGREES

(1) Bachelor of Arts in Education. This degree will be given to students who do the first two years of work in the College of Arts and Sciences, or the equivalent thereof, and meet the entrance and first two years curricula requirements of that college. Candidates for this degree will be required to complete,

with a grade of C or better, a minimum of 40 to 50 semester hours in a group of related academic subjects which are commonly taught in the public schools.

(2) Bachelor of Science in Education. This degree will be given to students who are admitted with advanced standing from normal schools, teachers colleges, or other professional institutions. Requirements for the degree will include a field of concentration in the academic subjects as for the B.A. degree, and the same professional courses. In meeting both these requirements, however, due credit will be given for the courses which have been taken previously.

Students specializing in the fields of commercial education, art education, music education, and physical education will be awarded degrees which indicate their major field of study.

EDUCATION COURSES IN THE SUMMER SESSION, BY EXTENSION, OR CORRESPONDENCE

During the Summer Session, and by correspondence and class extension, numerous education courses are offered. A general description of these programs will be found elsewhere in this catalog. Detailed information regarding the Summer Session and General Extension Courses, may be obtained by communicating with the Director, Mark R. Shibles, School of Education, Orono, Maine.

BUREAU OF EDUCATIONAL RESEARCH AND SERVICE

Organized as an integral part of the School of Education, the Bureau of Educational Research and Service is available to render specialized service in connection with testing programs, surveys, and counseling, both on campus and to the schools of the State. Information concerning these services, including appointments and fees, may be obtained from the Director.

In addition to being available for consultation on special problems, the Bureau maintains the regular services listed below.

Testing Service on the University Campus.—An International Business Machine Test Scoring Machine is available for campus use with either standardized or informal tests. Sample tests and catalogs of test publishers are available for study by members of the University faculty. Answer sheets, scoring keys, special pencils, and other materials, as well as information booklets on the construction of informal tests for machine scoring, are carried in stock.

Scoring and reporting the results of Freshman Week Tests are also carried on by the Bureau. A file of Freshman Week Test results since 1930 is maintained.

Testing Service Off-Campus.—The Bureau is available for consultation by school officials of the State in planning testing programs. Arrangements may be made for scoring tests used in such programs. Basic materials for use with the International Business Machine Scoring Machine can be rented from the Bureau.

State Scholarship Contest.—A testing program among the senior pupils of the secondary schools of the State is conducted each year. The major purpose of this program is to select recipients of a series of University Scholarships which the Trustees have made available to outstanding secondary school pupils of the State.

Individual Pupil Testing and Counseling.—Arrangements may be made with the Bureau, by parents and school administrators, for testing and guidance counseling of individual pupils of the schools of the State.

AUDIO-VISUAL SERVICE

The Audio-Visual Service, under the auspices of the School of Education, maintains a lending library of educational motion pictures, film strips, and recordings, and renders assistance in the selection and use of these materials. These materials and services are available to the schools of the State, responsible civic groups, and faculty and students of the University.

A small rental or service fee is charged for these materials when they are sent off campus; no fee is charged for their educational use on the campus. In addition, projection equipment, and a staff of student operators, are available for campus use. A projection room, accommodating 40 people, is provided in Stevens South, for use when suitable classroom space is unavailable.

In order to assist in the selection and use of audio-visual teaching aids, interested persons are invited to inspect these materials, and also the catalog and descriptive publications of the various manufacturers. The Office will be glad to arrange previews of any of its material.

Details of this service are contained in a separate bulletin which is available on request. For this bulletin, or other information, address the Office of the Director of Audio-Visual Service, 18 Stevens South.

CERTIFICATES FOR TEACHERS

It should be clearly understood that the State Department of Education has sole authority to issue certificates for teaching. The Office of the Dean of the School of Education, however, is in a position to advise prospective teachers concerning certificates. Specific information may be obtained by writing or consulting with the Deputy Commissioner of Education, State House, Augusta, Maine.

PLACEMENT BUREAU FOR TEACHERS

The Placement Bureau for Teachers, described on page 46, is administered by the School of Education. It is designed to assist prospective teachers in placement and to facilitate promotion of teachers in service. Information regarding this service may be obtained from the Office of the School of Education.

COURSES OF INSTRUCTION

Courses numbered 1-50 are for undergraduates only; courses numbered 51-100 are primarily for upperclassmen and graduates; courses numbered above 100 are primarily for graduates.

For courses in Psychology, see Department of Psychology in the College of Arts and Sciences.

PROFESSORS SHIBLES, JACKMAN, FOSTER, AND CRAWFORD; ASSOCIATE PROFESSOR RANKIN; ASSISTANT PROFESSOR HALL; PROFESSOR EMERITUS SMITH

29 (30). Supervised Student Teaching.—This course is carried on at various high schools under the immediate supervision of critic teachers. It is offered primarily for the benefit of seniors in the School of Education who wish a full semester in practical work. *Three credit hours.* EDUCATION STAFF

35, 36. Educational Foundations.—An orientation course designed primarily for juniors giving in the first semester basic points of view in history of education, principles of education, philosophy of education, comparative education, and community backgrounds; the second semester applies the principles of psychology and human relations to secondary school teaching in such areas as individual differences in learning, problem behavior and guidance of youth, social adjustment in school and community, preparation for work and self support, etc. *Three credit hours.* EDUCATION STAFF

45, 46. The Curriculum, Teaching and the Evaluation of Instruction.—A general study of the development of the school curriculum with emphasis upon modern trends in curriculum making will be the major emphasis of the first semester; the second semester stresses methods of teaching and emphasis is placed upon actual classroom experience under supervision. Consideration is likewise given to the techniques of evaluating the instructional program in terms of the accepted purposes of education. *Three credit hours.* EDUCATION STAFF

51. History of Education in the United States.—A general survey of the development of public and private education in the United States. Includes a study of changing philosophies, principles, and practices in American schools from the colonial era to the present time. *Three credit hours.* MR. SMITH

59. Principles of Secondary Education.—The application of the principles of education with special reference to the problems of high-school teaching. The aims of secondary education in a democracy in terms of skill, knowledge, tastes, and ideals. *Three credit hours.* MR. SMITH

62. Organization and Administration of the Secondary School.—A course designed for prospective principals and supervisors. It will deal with the organization and administration of the secondary school. Problems of school organization, administration of teacher and pupil personnel, improvement of teachers in service, and school-community relationships are considered. *Three credit hours.*
MR. SHIBLES

63. Junior High School Education.—A general course involving attention to the history, purposes, curriculum, and problems of guidance in the Junior High School. *Three credit hours.* MR. JACKMAN

66. Measurement and Evaluation in Education.—An introductory course in the techniques of measuring and evaluating the results of school experience. *Three credit hours.* MR. CRAWFORD

68. Educational and Vocational Guidance.—An introductory course relating to the scope, objectives, and characteristic functions of guidance in the secondary school. *Three credit hours.* MR. JACKMAN

70. Statistical Methods in Education.—Techniques and interpretations of results of basic statistical operations as used in education and psychology. *Three credit hours.* MR. CRAWFORD

75. Teaching the Social Studies in Secondary School.—An examination of present practices in method and curriculum of the secondary school with inquiry into modern tendencies. *Three credit hours.* MR. JACKMAN

75A. Teaching World Geography.—This course is designed primarily to offer suggestions to teachers of junior and senior high schools in regard to methods of teaching geographical relations effectively and to secure for these teachers a more adequate content of world comprehension. *Two credit hours.* MR. JACKMAN

75B. Teaching of Current Affairs.—This course deals with the development of intelligent reading of current newspapers and magazines with special reference to implications of geographical situations. *Two credit hours.* MR. JACKMAN

77. Methods of Teaching in Secondary Schools.—A study of general methods in the high school with especial emphasis upon unit techniques. Observations in schools of the region are required. *Three credit hours.* MR. JACKMAN

79. Motion Pictures in Education.—A detailed course dealing with proper techniques of selection, utilization and evaluation of motion pictures in the classroom. Students will have the opportunity to become competent operators of several types of motion picture projectors. Extensive previewing and evaluation of educational motion pictures and participation in the production of a motion picture will be part of the course. *Three credit hours.* MR. HALL

79A. Audio-Visual Aids to Instruction.—A practical course stressing the selection, utilization, and evaluation of audio-visual instructional materials. Students will have the opportunity of exploring the various aids such as motion pictures, slides, filmstrips, excursions, free materials, flat pictures, etc., and will be given assistance in following any particular interest or solving any special problem. *Three credit hours.* MR. HALL

80. Current Issues in American Education.—Public education in relation to present political, industrial, economic, and social backgrounds with special reference to changing an emerging responsibility of the schools. *Three credit hours.* MR. SMITH

81. Administration and Supervision of the Elementary School.—The course deals with the determination of desirable democratic, administrative, and supervisory programs in light of modern social conditions and educational practices. *Three credit hours.* MR. HALL

81B. Modern Practices in Elementary Education.—This course will survey the aims and basic philosophy of modern elementary education and explain practices with emphasis on child growth and development, creative activities, and social understandings. The course will be of special interest to secondary school teachers who have had no previous training in elementary education. *Three credit hours.* MR. HALL

87. Reorganization of the Secondary School Curriculum.—An inquiry into problems of curriculum reorganization, with special reference to current developments. *Three credit hours.* MR. FOSTER

91. The Community School.—This course explores problems that are related to the underlying principles of a democratic school system. It deals in detail with services which can be rendered through the extension of use of facilities to include more age groups, and by the construction of a curriculum in terms of community life and its problems. *Three credit hours.* MR. FOSTER

93. Improving Reading Abilities.—An analysis of reading techniques with attention to preventing or correcting reading difficulties. A knowledge of educational psychology and measurements is assumed. *Three credit hours.* MR. CRAWFORD

95 (96). Philosophy of Education.—Designed primarily for reading and discussion of the contributions made by philosophers to modern education. An analysis of principles and practices of the schools in relation to the ideals and ideas as these have been affected by the contributions of philosophers. *Three credit hours.* MR. SMITH

97 (98). Problems in Education.—Each student is assigned special problems in the field of education. Primarily for majors in education. Open by permission to others. *Credit hours arranged.* EDUCATION STAFF

99. Supervision of Instruction.—This course is offered for students who plan to enter the field of supervision either as a school principal or a beginning superintendent of schools. It deals primarily with the responsibility of supervision for the improvement of classroom teaching. *Three credit hours.* MR. SHIBLES

101. School and Society.—Deals with the place of education in modern society, placing special emphasis upon programs of education designed better to equip youth to deal with its problems. *Three credit hours.* MR. SMITH, MR. FOSTER

105. Methods of Research in Education.—A course designed to aid students in the selection, development, and reporting of systematic study of problems in education. Required of candidates for graduate degrees in education. *Two credit hours.* MR. CRAWFORD

108. Seminar in Methods of Teaching in the Secondary Schools.—This course is primarily intended to satisfy partial requirements for the Master of Education degree. Others may be admitted by the instructor on evidence of adequate teaching experience. It consists of the study of practical individual problems. *Two credit hours.* MR. JACKMAN

113. Seminar in Administration and Supervision.—This course is especially adapted to those students who look forward to supervisory and administrative problems. *Two credit hours.* MR. SHIBLES

115. Seminar in Guidance.—This course consists of individual projects in the development of practical guidance plans with periodical reports to the group. *Two credit hours.* MR. JACKMAN

116. Seminar in Curriculum of Secondary Schools.—This course consists of individual projects in curriculum planning with periodical reports to the group. *Two credit hours.* MR. FOSTER

117. Seminar in Audio-Visual Education.—An advanced course in audio-visual education for those who have had Ed 79 or Ed 79A or the equivalent in practical experience. Students may explore an area of immediate concern in the program of audio-visual education under the direction of the instructor. *Two credit hours.* MR. HALL

119. Seminar in Measurement and Evaluation in Education.—A course designed to permit students to develop and report individual projects in measurement and evaluation. *Two credit hours.* MR. CRAWFORD

120. The Paper.—Required of candidates for the Master of Education degree. *Two credit hours.* EDUCATION STAFF

125. The Thesis.—Required of candidates for the Master of Arts or Master of Science degree. *Six credit hours.* EDUCATION STAFF

SUMMER SESSION COURSES

Courses similar to the following list are usually offered during the Summer Session:

Elementary Crafts; Advanced Crafts; Children's Literature; Teaching of Art in the Elementary School; Curriculum Making in the Elementary School; Supervision of the Elementary School; Modern Practices in Elementary Education; The Social Development of the Child; The Elementary School Principalship; Language Arts in the Elementary Curriculum; Newer Practices in Reading in the Elementary School; Teaching the New Arithmetic; Workshop in Elementary Education; Teaching of Geography.

Music for Younger Children; Music for Older Children; Creative School Music.

Motion Pictures in Education; Audio-Visual Aids to Instruction; Problems in Audio-Visual Education.

Principles of Business Education; Improvement of Instruction in the General Business Education Subjects; Problems in the Teaching of Business Subjects.

Principles and Techniques of Guidance; Principles and Techniques of Counseling; Occupational Information: Its Collection and Dissemination.

Principles of Secondary Education; Secondary School Administration and Supervision; Junior High School Education; Educational Measurements; Statistical Methods in Education; The Teaching of Science from Daily Experiences; Public School Relations; Extra-Class Activities in the Secondary School; Teaching the Social Studies in Secondary School; Methods of Teaching in Secondary Schools; The Teaching of Communicative Arts; Education in an International World; Current Problems in Education; School and Society; Workshop in Secondary Education; Methods of Research in Education; Seminar in Methods of Teaching in the Secondary Schools; Administration and Supervision of Education; Seminar in Current Educational Literature.

In addition to the above courses, the Department offers instruction by correspondence, class extension, and off-campus extension work.

For complete descriptions of the Summer Session program or General Extension instruction write to Mark R. Shibles, Dean of the School of Education, Orono, Maine.

COLLEGE OF TECHNOLOGY

PAUL CLOKE, DEAN

College of Technology

The College of Technology offers a well-rounded education for the ambitious, properly prepared young man with an aptitude for mathematics, physics, and chemistry. The various curricula are so arranged that training in the basic sciences during the early part of the course is later applied to problems in the field of study which the student elects at the beginning of the sophomore year.

This scientific and technical work, accompanied by courses in English and public speaking, economics and psychology, or other groups of electives, prepares the student, upon graduation, for an administrative career as well as for purely professional work. Emphasis is placed on study and interests which will promote the engineer's active participation in the civic and social life of his community. The student should not elect non-technical courses indiscriminately among non-related subjects but should confine such studies to those which naturally fall in the same group, as (1) mathematics and science, (2) economics and psychology, (3) history, psychology, and sociology, (4) foreign language, (5) literature.

The College of Technology, which confers the degree of Bachelor of Science upon completion of any of its curricula, provides technical instruction in the following:

Chemical Engineering
- Pulp and Paper Technology

Chemistry

Civil Engineering
- Highway Engineering
- Sanitary Engineering
- Light Building Construction
- City Management

Electrical Engineering
- Communication
- Power

Engineering Physics

General Engineering

Mechanical Engineering

For Agricultural Engineering see page 66.

The freshman year (see page 163) is common to all engineering courses and chemistry.

Orientation lectures and conferences with faculty advisers during the freshman year are designed to assist the student in the final selection of his course.

The following requirements for graduation are common to all curricula in this College.

1. A total of 143 credit hours exclusive of basic Military Science and Tactics and Physical Education. Three of these hours may be allowed for thesis and eight for advanced Military.

2. Of the courses required for graduation, in which letter grades are given, 105 credit hours must be passed with a grade of C or above; or in the case of those students who are excused from Military or who enter with advanced standing from

other institutions, 70 per cent of the credit hours offered for graduation, in which letter grades are given, must be passed with a grade of C or above. This ratio of hours should be maintained throughout the course.

Beginning with the graduating class of 1949 the above rule is replaced by the following rule that a student must accumulate, during his course, 143 grade points. Grade points are computed by multiplying each credit hour of the letter grade by the following factors: A by 3, B by 2, C by 1, and D by 0.

3. Drawing, four credit hours.

4. Language: English and Public Speaking, twelve credit hours with a minimum of two and a maximum of four credit hours of Public Speaking.

5. Mathematics, eighteen credit hours.

6. Military Science and Tactics, seven credit hours. Physical Education, two years. Veterans may be excused.

7. Science: Chemistry, eight credit hours; Physics, ten credit hours.

Course Expenses

The following statement about the expenses incurred by students in the College is intended to supplement the material contained in the section on expenses, to be found elsewhere in this catalog.

For College of Technology students the minimum and maximum course expenses (inclusive of required equipment, books, and supplies, but exclusive of Military deposit) are indicated in the following table:

Freshmen	$125.00 Per Year, of which approximately $100.00 will be required for the first semester, which includes drawing equipment and instruments.
Sophomores	$65.00–100.00 Per Year
Juniors	65.00–125.00 Per Year
Seniors	65.00–125.00 Per Year

In the case of the sophomores, juniors, and seniors, about 60% of the expenses will come in the first semester. The expense for these students is mostly for textbooks, paper, etc.

In Chemistry and Chemical Engineering courses, students are required to pay for all apparatus broken or lost and for certain non-returnable supplies. Breakage cards at $3.00 each are obtainable at the Treasurer's office. Unused portions will be refunded at the end of the semester on obtaining clearance at the chemistry storeroom.

Freshman Year

Common to all Engineering Courses and Chemistry

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ch	1	Gen. Chemistry	3	3	4	Ch	2	Gen. Chemistry	3	3	4
Eh	1	Freshman Comp.	3	0	3	Eh	2	Freshman Comp.	3	0	3
Md	1	Funds. of Draft.	0	4	2	Md	2	Ely. Mach. Draft.	0	4	2
Ms	1	Trigonometry	2	0	2	Ms	4	Anal. Geom. & Cal.	4	0	4
Ms	3	Algebra	2	0	2	Mt	2	Military Training	2	1	1½
Mt	1	Military Training	2	1	1½	Pe	2	Phy. Education	0	2	0
Pe	1	Phy. Education	0	2	0	Ps	2	General Physics	4	2	5
Ps	1	General Physics	4	2	5						
Gc	5	Orientation	1	0	½						

Graduate Study

Any graduate with a B.S. degree from a recognized engineering school is eligible for graduate study in the College of Technology, provided his undergraduate record meets the general requirements for graduate study in the University. (See general requirements for the Master of Science degree on pages 201-205.) The candidate must complete, without credit, any undergraduate courses which may be prerequisite to courses included in the program of graduate study. In general, from six to ten credit hours will be devoted to a thesis in the field of the student's major interest. Selection of courses must conform to a general plan laid down either before study begins or very soon after registration.

DEPARTMENTS OF INSTRUCTION

When a course is regularly offered in more than one semester, it is designated by two numbers, the second of which is in parenthesis [*e.g., 1 (2)*].

When a dash is used between the two numbers (e.g., 1-2), both semesters must be taken to obtain credit; when a semicolon is used (e.g., 1;2), the first semester may be taken by itself, but the second cannot be taken unless the first is taken previously; when a period is used (e.g., 1. 2), either semester may be taken for credit. Courses numbered 1-50 are for undergraduates only; courses numbered 51-100 are primarily for upperclassmen and graduates; courses numbered above 100 are primarily for graduates.

CHEMICAL ENGINEERING

(including Pulp and Paper Technology)

Professors Jenness, Bray; Assistant Professor Thode; Mr. Axtell, Mr. Stinchfield

The Chemical Engineering curriculum is designed to provide the education necessary to prepare men for successful living in the modern world, for those who wish to undertake professional work in the design, operation, and improvement of the processes of chemical industry. The curriculum provides a broad background in the humanities and in the fundamentals of science and engineering, and affords the opportunity for the application of these fundamentals in professional courses.

Since it is essential that chemical engineers have a sound basic training in chemistry, the curriculum for the sophomore year is identical with that for Chemistry. Professional Chemical Engineering courses are introduced in the junior year, and in the senior year make up the major content of the work. The necessary basic knowledge of electrical and mechanical engineering is provided by courses in these fields. The curriculum leads to the degree af Bachelor of Science in Chemical Engineering.

This department also offers professional training in Pulp and Paper Technology which leads to the Bachelor of Science degree. It is possible for certain students, who do not desire a B.S. degree, to register as special students for a series of related Pulp and Paper and Chemical Engineering courses.

Graduate Work in Chemical Engineering

Candidates for the degree of Master of Science must have received the degree of Bachelor of Science. They must also have completed a curriculum consistent with the requirements of the American Institute of Chemical Engineers, or take the necessary courses to accomplish that objective without receiving graduate credit for them. Graduate credit for the advanced degree generally consists of twenty hours of professional courses and ten hours of investigation and thesis. Some industrial fellowships and assistantships are available to graduate students. A candidate who accepts either of these usually requires two years to complete the requirements for the Master of Science degree.

CURRICULUM IN CHEMICAL ENGINEERING

Freshman Year. See Page 163.

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours Rec.	Lab. or Comp.	Cr.	Subject			Hours Rec.	Lab. or Comp.	Cr.
Ch	31	Qualitative Anal.	2	3	3	Ch	40	Quantitative Anal.	1	8	4
Ch	51	Organic Chemistry	3	4	5	Ch	52	Organic Chemistry	3	4	5
Ms	7	Calculus	5	0	5	Ms	8	Calculus	5	0	5
Mt	3	Military Training	2	1	2	Mt	4	Military Training	2	1	2
My	1	Modern Society	3	0	3	My	2	Modern Society	3	0	3
Pe	3	Phy. Education	0	2	0	Pe	4	Phy. Education	0	2	0
Sh	1	Public Speaking	2	0	2						

Junior Year

			Rec.	Lab. or Comp.	Cr.				Rec.	Lab. or Comp.	Cr.
Ch	71	Physical Chemistry	2	6	5	Ch	72	Physical Chemistry	2	6	5
ChE	33	Stoichiometry	3	0	3	ChE	64	Elem. of Chem. Eng.	4	0	4
ChE	37	Intro. to Thermo-dynamics	3	0	3	Ee	44	Applied Electronics	1½	1	2
Ee	41	Electric Circuits	2	0	2	Es	6	Comp. Econ. Syst.	3	0	3
Eh	15	Masterpieces of Eng. and American Lit.	3	0	3	Me	54	Applied Mechanics	3	0	3
Me	53	Applied Mechanics	3	0	3			*Prof. Elective	3	0	3

Senior Year

			Rec.	Lab. or Comp.	Cr.				Rec.	Lab. or Comp.	Cr.
ChE	49	Thesis	0	0	1	ChE	50	Thesis	0	0	2
ChE	65	Elem. of Chem. Eng.	4	0	4	ChE	78	Organic Tech.	3	0	3
ChE	77	Inorganic Tech.	3	0	3	ChE	82	Chem. Eng. Lab.	1	4	3
ChE	81	Chem. Eng. Lab.	1	4	3	ChE	94	Chem. Eng. Thermodynamics	3	0	3
Eh	5	Technical Comp.	2	0	2	ChE	96	Chem. Process Development	3	0	3
		*Prof. Elective	3	0	3	Me	42	Mechanical Lab.	0	3	1½
		Elective in Humanities	3	0	3			Elective in Humanities	3	0	3

* Recommended Professional Elective. Students who contemplate graduate work are strongly advised to elect one year of German.

CURRICULUM IN PULP AND PAPER TECHNOLOGY

Freshman Year. See Page 163.

Sophomore and Junior Years, Identical with Chemical Engineering

Senior Year

FALL SEMESTER					SPRING SEMESTER				
Subject			Hours		Subject			Hours	
			Rec.	Lab. or Comp.	Cr.			Rec.	Lab. or Comp.	Cr.
*Bt	43	Wood Structure	1	2	2	ChE	86	Chem. Eng. Lab.	1	4	3
ChE	65	Elem. of Chem. Eng.	4	0	4	*Fy	16	Wood Identification	0	3	1
Eh	5	Technical Comp.	2	0	2	*Pa	50	Thesis	0	0	2
*Pa	49	Thesis	0	0	1	Pa	66	Paper Technology	3	0	3
Pa	65	Pulp Technology	3	0	3	Pa	68	Paper Manufacture	0	4	2
Pa	67	Pulp Manufacture	0	4	2	Pa	88	Paper Testing and Anal.	0	4	2
Pa	87	Pulp Testing & Anal.	0	4	2	Pa	90	Pulp and Paper Mill Inspections	0	4	2
		Elective in Humanities	3	0	3			Elective in Humanities	3	0	3

* Recommended elective.

Courses in Chemical Engineering

(In each laboratory course a breakage card is required.)

33. Stoichiometry.—Application of the principles of heat and material balances to the solution of problems in combustion and industrial chemistry. Prerequisites, Ch. 1, 2. Lecture and recitation, *three hours a week. Three credit hours.*

MR. STINCHFIELD

37. Introduction to Thermodynamics.—Development of the first law of thermodynamics and its application to engineering problems of both the batch and the flow type. Consideration of the second law in its elementary forms. Prerequisites, Ch 1, 2; Ms 7, 8. Lecture and recitation, *three hours a week. Three credit hours.*

MR. AXTELL

49. 50. Undergraduate Thesis.—Original investigation of a chemical engineering problem, and reporting of the results. Open only to seniors. *Credit, arranged.*

THE CHEMICAL ENGINEERING STAFF

64; 65. Elements of Chemical Engineering.—Basic principles of the unit operations and their application to engineering problems. Prerequisites, ChE 33, 37. Lecture and recitation, *four hours a week, Four credit hours.*

MR. JENNESS, MR. THODE

69 (70). Chemical Engineering of Pulp and Paper Manufacture.—An advanced course in those unit operations of particular importance in the manufacture of pulp and paper; e.g., flow of fluids, heat transfer, absorption, evaporation, drying, etc. Prerequisites, Ch 72; ChE 65. Lecture and recitation, *three hours a week. Three credit hours.*

MR. JENNESS

77. Inorganic Technology.—Quantitative study of the industrial chemistry of commercially important inorganic materials. Lecture and recitation, *three hours a week. Three credit hours.*

MR. THODE

78. Organic Technology.—Similar to ChE 77, but for organic materials. Lecture and recitation, *three hours a week. Three credit hours.* MR. THODE

81; 82. Chemical Engineering Laboratory.—Application of the principles of the unit operations in the laboratory, using pilot scale equipment. Emphasis is placed upon the preparation of formal reports. Prerequisites, ChE 64 for 81, ChE 65 for 82. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. AXTELL

83 (84). Unit Process Laboratory.—A chemical engineering laboratory course in which emphasis is placed upon the unit processes, as contrasted to the unit operations. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. AXTELL

85 (86). Chemical Engineering Laboratory.—A one-semester course in chemical engineering laboratory, for pulp and paper majors only. Prerequisite, ChE 65. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. STINCHFIELD

87. 88. Chemical Engineering Mill Practice.—Group investigations of the operation of commercial equipment in neighboring industrial plants. Open only to seniors and graduate students. *Time and credit arranged.*

THE CHEMICAL ENGINEERING STAFF

94. Chemical Engineering Thermodynamics.—Development and quantitative application of the second law of thermodynamics. Considerations of heat engines, the concept of availability, chemical equilibrium, etc. Prerequisites, ChE 37, 65. Lecture and recitation, *three hours a week. Three credit hours.*

MR. AXTELL

96. Chemical Process Development.—Integrated study of the development of a chemical process, considering the various fundamental and technical aspects, the proposed sequence of operations, the design of equipment, and a cost analysis. Open only to seniors and graduate students. Classroom, *three hours a week. Three credit hours.* MR. JENNESS

115. 116. Graduate Seminar.—Reports and discussion of recent developments in chemical engineering and related fields, based on the literature or current investigations. Required of all graduate students. *One hour a week. One-half credit hour.* THE CHEMICAL ENGINEERING STAFF

125. Graduate Thesis.—*Credit arranged.*

THE CHEMICAL ENGINEERING STAFF

141 (142). Colloid Technology.—A presentation of the fundamental aspects of colloid chemistry from an engineering standpoint. The application of colloid chemistry to chemical industries is described. Lecture, demonstration and reports. Lecture, *three hours per week. Three credit hours.* MR. THODE

143 (144). Plastics Technology.—An introductory course in the chemistry and physics of high polymeric substances. Practical applications and commercial practice in this field are considered. Lectures, demonstrations, reports. *Three hours per week. Three credit hours.* MR. THODE

145 (146). Industrial Chemistry.—A comprehensive study of the major inorganic industrial chemical processes. Application of physical chemical principles in industrial practice is stressed. Fields covered include: sulfuric acid, the Solvay process, ferrous metallurgy, manufacture of other alkalis and mineral acids, nitrogen fixation, and the like. *Four hours per week. Four credit hours.* MR. THODE

175 (176). Chemical Engineering Plant Design.—A detailed study in plant

design, in which each student works on an individual basis. Classroom time arranged. *Three credit hours.* MR. AXTELL

177 (178). Economic Balance.—An advanced problem course, in which emphasis is placed upon the quantitative evaluation of the various factors important in the design and control of chemical plant equipment. Arrival at the optimum point of design and operation from the economic standpoint is stressed. Classroom, *three hours a week. Three credit hours.* MR. JENNESS

Courses in Pulp and Paper Technology

40s. Summer Mill Practice.—The obtaining of practical mill experience is encouraged of students who have completed their junior year and contemplate senior work in pulp and paper technology. *Two credit hours.*

MILL STAFF AND MR. BRAY

49. 50. Undergraduate Thesis.—Original investigation of a pulp and paper problem and reporting of the results. Open only to seniors. *Credit arranged.*

THE CHEMICAL ENGINEERING STAFF

65. Pulp Technology.—A course in the manufacture of various kinds of wood pulps and the chemistry involved in present-day pulp making. Prerequisite, Ch 2. Lecture and recitation, *three hours a week. Three credit hours.* MR. BRAY

66. Paper Technology.—A course in the processes of manufacturing paper. Prerequisite, Pa 65. Lecture and recitation, *three hours a week. Three credit hours.* MR. BRAY

67. Pulp Manufacture.—A laboratory course in the manufacture and bleaching of chemical wood pulps. Prerequisite, Pa 65, (can be taken simultaneously). Laboratory, *four hours a week. Two credit hours.* MR. BRAY

68. Paper Manufacture.—A laboratory course in the manufacture of paper, including beating, jordaning, rosin sizing, wet strength resins, fillers, coloring tests, etc. Prerequisite, Pa 66, (can be taken simultaneously). Laboratory, *four hours a week. Two credit hours.* MR. BRAY

82. Pulp Coloring and Bleaching.—A laboratory course in the theory and practice of the coloring and bleaching of pulps. Prerequisites, Pa 65, 66. Laboratory, *four hours a week. Two credit hours.* MR. BRAY

87. Pulp Testing and Analysis.—A laboratory course in pulp evaluation. Prerequisites, Ch 40; Pa 65. Laboratory, *four hours a week. Two credit hours.* MR. BRAY

88. Paper Testing and Analysis.—A laboratory course involving the physical, chemical, and microscopical testing of various kinds of papers. Prerequisites, Ch 40; Pa 66. Laboratory, *four hours a week. Two credit hours.* MR. BRAY

89 (90). Pulp and Paper Mill Inspections.—Mill visits involving the observation of operations in various types of pulp and paper plants. *Eight hours a week* for one half semester. *Two credit hours.* MR. BRAY

115. 116. Graduate Seminar.—Reports and discussion of recent developments in pulp and paper technology and related fields, based on the literature or current investigations. Required of all graduate students. *One hour a week. One-half credit hour.* THE CHEMICAL ENGINEERING STAFF

125. Graduate Thesis.—*Credit arranged.*

THE CHEMICAL ENGINEERING STAFF

CHEMISTRY

Professors Douglass, Brann; Associate Professor Otto; Assistant Professors Bogan, Martin, Tebbe, Beamesderfer, Hart; Mr. Lewis, Mr. Trust

The Chemistry curriculum is designed to give the student a thorough understanding of the principles of inorganic, analytical, organic and physical chemistry and closely related sciences, and a mastery of the fundamental techniques and skills essential to successful chemical testing of industrial materials, the development of new products, and the improvement of industrial processes involving changes of materials.

Superior students should give serious consideration to continuing their chemical studies at the graduate level.

For Chemistry courses in the Summer Session, see the Summer Session Bulletin.

For courses in biochemistry, see the list of courses given by the Department of Bacteriology and Biochemistry.

Graduate Work in Chemistry

The general requirements for the Master of Science degree are described on pages 201-205. Candidates for the M.S. in Chemistry are expected to complete without graduate credit the minimum undergraduate requirements established by the American Chemical Society Committee on Professional Training if they have not been graduated from an ACS accredited institution. These requirements include full year courses in general, analytical, organic and physical chemistry and advanced chemistry courses which include both lecture and laboratory work. In addition, the student must have a reading knowledge of German, one year of physics, and mathematics through the calculus.

The graduate program in Chemistry will normally include courses 95, 111, 113, 151-2, 171-2, plus other graduate courses in chemistry, chemical engineering, physics or biochemistry. The research on which the thesis is based is an integral part of the student's training and will normally constitute about one fifth of the total graduate program. Half time graduate assistants usually require two years to complete their requirements for the master's degree.

CHEMISTRY CURRICULUM

Freshman Year. See Page 163.

Sophomore Year

FALL SEMESTER

Subject			Hours Rec.	Lab. or Comp.	Cr.
Ch	31	Qualitative Anal.	2	3	3
Ch	51	Organic Chemistry	3	4	5
Ms	7	Calculus	5	0	5
Mt	3	Military Training	2	1	2
My	1	Modern Society	3	0	3
Pe	3	Phy. Education	0	2	0
Sh	1	Public Speaking	2	0	2

SPRING SEMESTER

Subject			Hours Rec.	Lab. or Comp.	Cr.
Ch	40	Quantitative Anal.	1	8	4
Ch	52	Organic Chemistry	3	4	5
Ms	8	Calculus	5	0	5
Mt	4	Military Training	2	1	2
My	2	Modern Society	3	0	3
Pe	4	Phy. Education	0	2	0

Junior Year

FALL SEMESTER

		Subject	Hours Rec.	Lab. or Comp.	Cr.
Ch	71	Physical Chemistry	2	6	5
Ch	89	Adv. Organic Prep.	0	6	2
Ch	91	Int. Organic Chem.	3	0	3
Eh	15	Masterpieces of Eng. and American Lit.	3	0	3
Gm	19	German for Chemists	3	0	3
		Elective			3

SPRING SEMESTER

		Subject	Hours Rec.	Lab. or Comp.	Cr.
Ch	64	Int. Quant. Anal.	1	8	4
Ch	72	Physical Chemistry	2	6	5
Ch	92	Int. Org. Chem.	3	0	3
Es	6	Comp. Econ. Syst.	3	0	3
Gm	20	German for Chemists	3	0	3
		Elective			3

Senior Year

			Rec.	Lab. or Comp.	Cr.
*By	1	Bacteriology	0	6	3
*By	3	Bacteriology	2	0	2
Ch	49	Thesis	Ar		1
Ch	85	Chem. Literature	2	0	2
*ChE	33	Stoichiometry	3	0	3
Eh	5	Technical Comp.	2	0	2
Gm	21	German for Chemists	3	0	3
		Elective in Humanities	3	0	3

			Rec.	Lab. or Comp.	Cr.
Ch	50	Thesis	Ar		2
Ch	90	Organic Qual. Anal.	0	6	2
*ChE	64	Els. of Chem. Eng.	4	0	4
Gm	22	German for Chemists	3	0	3
		Electives			5-8

* Recommended elective.

Courses in Chemistry

(In each laboratory course a breakage card is required.)

1; 2. General Chemistry.—The principles of general chemistry. Course 2 is largely devoted to an introduction to the elements of qualitative analysis. Classroom, *three hours a week;* laboratory, *three hours a week. Four credit hours.*

MR. BOGAN, MR. MARTIN, MR. DOUGLASS AND STAFF

5. Inorganic Chemistry.—For Home Economics and Five Year Nursing students only. The elements of general and inorganic chemistry. Classroom, *three hours a week;* laboratory, *two hours a week. Four credit hours.*

MR. BOGAN

7. General Chemistry.—For Three Year Nursing students only. An elementary introduction to the principles of inorganic and organic chemistry. Classroom, *two hours a week;* laboratory, *two hours a week. Three credit hours.*

MR. BRAY

31. Semi-Micro Qualitative Analysis.—A systematic theoretical and laboratory study of the fundamental principles of analysis as applied to the common cations and anions on the micro-scale. Prerequisite, Course 2. Lectures, *two hours a week;* laboratory, *three hours a week. Three credit hours.* MR. OTTO

35 (36). Introductory Organic Chemistry.—A study of the aliphatic and aromatic series of compounds. This course is especially intended for predental and other students requiring a less extensive course than Course 51; 52. Prerequisite, Course 2. Classroom, *three hours a week;* laboratory, *four hours a week. Five credit hours.* MR. TEBBE

40. Quantitative Analysis.—An introductory course illustrating the fundamental principles of gravimetric and volumetric analysis. (Engineering Physics students may take this course under the heading of 40a, with one recitation and six hours of laboratory for *three credit hours.*) Prerequisite, Course 2 or 5. Classroom, *one hour a week;* laboratory, *eight hours a week. Four credit hours.*

MR. OTTO, MR. TRUST

49. 50. Undergraduate Thesis.—The thesis will embody the result of the study of a special chemical problem in the laboratory. It will partake of the nature of original investigation. Open only to seniors. *Three credit hours.*

CHEMISTRY STAFF

51; 52. Organic Chemistry.—An introductory course dealing with the aliphatic and aromatic compounds. (Engineering Physics students may take the fall semester course under the heading of 51a without laboratory for *three credit hours.*) Prerequisite, Course 2. Classroom, *three hours a week;* laboratory, *four hours a week. Five credit hours.* MR. DOUGLASS, MR. TEBBE, MR. HART

54. Advanced Inorganic Chemistry.—Advanced theoretical and descriptive inorganic chemistry emphasizing periodic relationships. Prerequisites, Courses 2, 31 and 40. Lectures and recitations, *two hours a week. Two credit hours.*

MR. BOGAN, MR. OTTO

64. Intermediate Quantitative Analysis.—A continuation of Course 40, taking up some of the more difficult volumetric and gravimetric methods. Prerequisite, Course 40. Classroom, *one hour a week;* laboratory, *eight hours a week. Four credit hours.* MR. BOGAN, MR. OTTO

65. Organic Quantitative Analysis.—The semi-micro analysis of organic compounds for metals, carbon, hydrogen, nitrogen, sulfur and halogen by the Kjeldahl, Carius, Parr Bomb, and combustion methods. Prerequisites, Courses 52 and 64. Laboratory, *six hours a week. Two credit hours.* MR. TEBBE

71; 72. Physical Chemistry.—A detailed study of fundamental principles of chemistry and their applications. Prerequisites, Physics 2 and Calculus. Classroom, *two hours a week;* laboratory, *six hours a week. Five credit hours.*

MR. BRANN, MR. BEAMESDERFER

73; 74. Chemical Microscopy.—The technique of handling and analyzing samples of very small size. Chemical and physical changes, crystalline form, density and refractive index observed under the microscope. Open only to exceptional students. Prerequiste, Course 40. Laboratory (including recitations), *six hours a week. Two credit hours.* MR. OTTO

84. Metallurgy.—A descriptive course dealing with ferrous and non-ferrous metals and alloys. Classroom, *three hours a week. Three credit hours.* MR. MARTIN

85. Chemical Literature.—A study of methods for searching the chemical literature. Prerequisites, Course 52 and Elementary German. Classroom, *two hours a week. Two credit hours.* MR. MARTIN

89. Advanced Organic Preparations.—The preparation of a number of organic compounds by reactions not illustrated in the laboratory work of Courses 51 and 52. Prerequisite, Course 52. Laboratory, *six hours a week. Two credit hours.*

MR. HART, MR. TEBBE

90. Organic Qualitative Analysis.—The identification of pure organic compounds and the technique of preparing derivatives. Prerequisite, Course 52. Laboratory, *six hours a week. Two credit hours.* MR. HART, MR. TEBBE

91; 92. Intermediate Organic Chemistry.—A second year course involv-

ing an extensive and intensive study of the reactions of organic compounds. Prerequisite, Course 52. Recitation, *three hours a week. Three credit hours.*

MR. TEBEE

95. Chemical Thermodynamics.—A brief study of the laws of thermodynamics as applied to chemical problems. Prerequisite, Course 72. Classroom, *three hours a week. Three credit hours.* MR. BRANN

113. The Chemistry of Cellulose and Wood Constituents.—A study of the present knowledge concerning the organic chemistry of cellulose, lignin and other compounds which have been identified as constituents of wood. Prerequisite, Course 52. *Three lectures a week. Three credit hours.* MR. DOUGLASS

115. 116. Graduate Seminar.—Reports and discussion of recent developments in chemistry and related fields based on the literature or on the results of current laboratory investigations. Required of all graduate students. *One meeting per week. One-half credit hour.* THE CHEMISTRY STAFF

125. Graduate Thesis.—Original investigation at the graduate level. *Credit, arranged.* THE CHEMISTRY STAFF

151. 152. Advanced Organic Chemistry.—During a given semester the content of this course will be selected from one of the following fields: Polynuclear Compounds, Electronic Structure of Organic Compounds, The Reactions of Organic Compounds, or Heterocyclic Compounds. The selection of the field to be covered during a specific semester will be determined by demand. Prerequisite, Course 52. Classroom, *two hours a week. Two credit hours.* MR. HART, MR. DOUGLASS

171. 172. Advanced Physical Chemistry.—During a given semester the content of this course will be selected from one of the following fields: Chemical Kinetics, Surface Chemistry, Atomic and Molecular Structure, or Chemical Equilibrium. The selection of the field to be covered during a specific semester will be determined by demand. Prerequisite, Course 72. Classroom, *two hours a week. Two credit hours.* MR. BEAMESDERFER, MR. BRANN

174. Colloids.—Prerequisite, Course 72. Given upon sufficient demand. Classroom, *two hours a week;* laboratory, *three hours a week. Three credit hours.*

MR. BEAMESDERFER, MR. MARTIN

CIVIL ENGINEERING

PROFESSORS EVANS, LEAVITT, GRAY, TREFETHEN; ASSOCIATE PROFESSORS RYCKMAN, TAYLOR; ASSISTANT PROFESSORS SHAININ, HAMM, GOLDTHWAIT; MR. CHAPMAN

The Civil Engineering curriculum is arranged to prepare young men to take up the work of design and construction of buildings, bridges, transportation facilities, and sanitary systems. Specific phases of the work include surveying, geology, soil mechanics, highway and hydraulic engineering, and structural design. Additional work is offered in soil mechanics and geology. While the same basic work is required of all Civil Engineering students, a small amount of time, mostly in the senior year, may be allotted to more advanced courses in Highway Engineering, Sanitary Engineering, Light Building Construction, and City Management. To complete the City Management Program, a fifth year is required in the Department of History and Government for which the degree of Master of Science in Public Management is granted.

The foundation of all engineering curricula is highly technical; nevertheless,

some non-technical studies must be included so that an engineer may eventually take up administrative work in his chosen field. Courses in mechanical and electrical engineering are included in the program to familiarize the civil engineer with phases of work in these fields frequently encountered in professional practice.

Summer Surveying

All Civil Engineering students are expected to attend a six weeks' surveying course immediately following the end of the sophomore year. Tuition charges are given in the catalog section on Financial Information.

Graduate Work in Civil Engineering

There is a wide variety of courses from which the graduate student may choose to make up a program of study. In general, this program will include advanced courses in mathematics, mechanics, geology, structures and foundations, with at least one course in business administration.

Freshman Year. See Page 163.

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ce	1	Surveying	3	0	3	Ce	10	Curves & Earthwork	3	0	3
Ce	3	Field Work & Plotting	0	9	3	Gy	16	Geology	2	1½	2½
Md	3	Descriptive Geometry	0	4	2	Ms	8	Calculus	5	0	5
Ms	7	Calculus	5	0	5	Mt	4	Military Training	2	1	2
Mt	3	Military Training	2	1	2	Pe	4	Phy. Education	0	2	0
Pe	3	Phy. Education	0	2	0	Ps	22	Mechanics & Heat	0	4	2
Sh	1	Public Speaking	2	0	2			Non-Technical			
		Non-Technical						Elective*	—	—	3
		Elective*	—	—	3						

Summer Surveying

Subject			Hours Cr.
Ce	11s	Highway and Railroad Surveys	3
Ce	23s	Geodetic and Topographic Surveying	2
Ce	31s	Hydrographic Surveying	1

Junior Year

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
Ce	29	Highway Construction	2	0	2	Ce	20	Structural & Highway			
Ce	33	Sanitary Engineering	3	0	3			Materials	1	4	3
Eh	5	Technical Comp.	2	0	2	Ce	26	Hydraulics	3	0	3
Gy	17	Engineering Geology	2	1½	2½	Ce	52	Theory of Structures	3	0	3
Me	51	Mechanics	5	0	5	Me	52	Mechanics	5	0	5
		Non-Technical						Non-Technical			
		Elective*	—	—	3			Elective*	—	—	3

Senior Year

FALL SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Ce	27	Soil Mechanics	3	0	3
Ce	57	Structural Design	3	0	3
Ce	59	Structural Design	0	6	2
Ee	41	Electric Circuits	2	0	2
Me	43	Heat Engineering	3	0	3
Me	41	Mechanical Lab.	0	3	1½
		Non-Technical Elective*	—	—	3

SPRING SEMESTER

		Subject	Hours Rec.	Lab.	Cr.
Ce	58	Structural Design	3	0	3
Ce	60	Structural Design	0	9	3
Ee	46	Electric Machinery	2	0	2
Ee	48	Electrical Laboratory	0	3	1½
		Non-Technical Elective*	—	—	3

Highway Engineering Option

Ce	63	Highway Economics	3	0	3	Ce	68	Highway Engineering	0	4	2
						Ce	72	Highway Engineering	2	0	2

Sanitary Engineering Option

By	3	Bacteriology	2	0	2	By	2	Bacteriology	0	6	3
Ce	71	Sanitary Engineering	2	0	2	Ce	74	Sanitary Engineering	2	0	2

Light Building Construction Option

Ce	61	Contracts & Specifications	2	0	2	Ce	64	Construction Theory and Practice	3	0	3
						Me	91	Heat. & Air Cond.	3	0	3

City Management Option

Gt	33	Municipal Government	3	0	3	Gt	34	Municipal Admin.	3	0	3
Gt	9	National Planning	2	0	2	Gt	10	Community Planning	2	0	2

Fifth Year

For M.S. in Public Management Degree

			Rec.	Lab.	Cr.				Rec.	Lab.	Cr.
By	3	Bacteriology	2	0	2	Ba	60	Personnel Mgt.	3	0	3
Ce	71	Sanitary Engineering	2	0	2	By	2	Bacteriology	0	6	3
Es	71	Public Finance	3	0	3	Ce	74	Sanitary Engineering	2	0	2
Gt	51	Public Admin.	3	0	3	Gt	52	Public Admin.	3	0	3
Gt	97	Public Opinion	3	0	3	Gt	84	American Const.	3	0	3
Gt	83	American Const.	3	0	3	Gt	96	Seminar	3	0	3
Gt	95	Seminar	3	0	3						

(Internship, 6 months, and thesis)

* Non-Technical studies are taken in groups according to the curriculum followed as follows:

Highway Engineering and Sanitary Engineering Option

		Subject	Hours Rec.	Lab.	Cr.
Eh	15	Masterpieces of English and American Literature	3	0	3
Es	6	Comparative Economic Systems	3	0	3
My	1; 2	Modern Society	3	0	3
		Senior year, non-technical			6

Light Building Construction Option

Ba 9 (10)		Accounting	2	2	3
Py	3	Applied Psychology	2	0	2
Py	12	Advertising and Selling	3	0	3
		Senior year, non-technical			6

City Management Option

Ba 9 (10)		Accounting	2	2	3
Gt	31. 32	American Government	3	0	3
		Senior year			6

Courses in Civil Engineering

1 (2). Surveying.—The general theory of plane surveying and plotting: surveying instruments, their adjustments, and use, and the methods commonly used for surveying and plotting. Must be accompanied by Course 3 (4). Prerequisite, Mathematics 1. *Three hours a week. Three credit hours.* MR. TAYLOR, MR. HAMM

3 (4). Field Work and Plotting.—Practice in the use of the tape, compass, transit, and level, followed by practice in the common methods of map drawing. Must be taken with Course 1 (2). Prerequisite, Engineering Drafting 1. Field and drawing room, *nine hours a week. Three credit hours.*

MR. TAYLOR, MR. RYCKMAN, MR. CHAPMAN

5 (6). Surveying.—Surveying instruments and their use and the various methods commonly used for plane surveying. Prerequisite, Mathematics 1. Classroom, *two hours a week;* field work, *three hours a week. Three credit hours.*

MR. LEAVITT, MR. CHAPMAN, MR. HAMM

8. Land Surveying.—Methods employed by the General Land Office for laying out public lands and such other methods as may have been used by the various states. Legal principles. Prerequisites, Courses 1 and 3. Classroom, *two hours a week;* field work, *nine hours a week during the last six weeks. Three credit hours.* MR. TAYLOR

10. Curves and Earthwork.—The geometry of simple, compound, and reverse circular curves, transition curves, vertical curves, and earthwork. Prerequisites, Courses 1 and 3. Classroom, *three hours a week. Three credit hours.*

MR. TAYLOR

20. Structural and Highway Materials.—Laboratory and recitations covering the methods of testing, characteristics of, and specifications for the materials commonly used for structural and highway purposes. Prerequisite, Mechanical Engineering 51. Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. LEAVITT, MR. RYCKMAN, MR. TAYLOR

26. Hydraulics.—Fundamental data; hydrostatics; theoretical hydraulics; instruments and observations; theoretical and actual flow through orifices, weirs, tubes, pipes, and conduits; dynamic pressure of water. Prerequisite, Mechanical Engineering 51. *Three hours a week. Three credit hours.* MR. RYCKMAN

27. Soil Mechanics.—The fundamental physical properties of soils and their effect on the solution of common problems that arise in practical engineering design and construction. Prerequisite, Mechanical Engineering 51. *Three hours a week. Three credit hours.* MR. GRAY

29. Highway Construction.—The construction and maintenance of city pavements and country roads under various conditions of traffic, climate, soil, etc. Prerequisites, Courses 1 and 10. *Two hours a week. Two credit hours.* MR. LEAVITT

33. Sanitary Engineering.—An introductory course outlining the engineering problems which are involved in designing and operating municipal water supply, and sewage disposal systems. Prerequisites, Courses 1 and 10, or Course 5. *Three hours a week. Three credit hours.* MR. RYCKMAN

34. Sanitary Engineering.—Functional design of water purification plants in small communities; functional design of sewage treatment plants; stream pollution. Prerequisite, Course 33. Classroom, *one hour a week;* laboratory, *six hours a week. Three credit hours.* MR. RYCKMAN

47. 48. Seminar.—Written and oral reports with discussions on assigned topics in any special branch of Civil Engineering. *Two hours a week. Two credit hours.* THE STAFF

49. 50. Thesis.—The study of and report upon some original investigation or design. *Time to be arranged. Two or three credit hours.* THE STAFF

51. Hydraulic Engineering, Office Work.—Rating curves and vertical velocity curves are plotted and discharge measurements are computed; problems in hydrology, water storage, and water power. Prerequisites, Courses 26 and 31s. Course 55 must be concurrent. Drawing room, *four hours a week. Two credit hours.* MR. RYCKMAN

52. Theory of Structures.—The determination of maximum stresses and strains in beams, girders, and truss members under the usual systems of loading. Prerequisite, Mechanical Engineering 51. *Three hours a week. Three credit hours.* MR. EVANS

53. Hydraulic Engineering, Office Work.—Similar to but shorter than Course 51. Prerequisites, Courses 26 and 31s. Drawing room, *two hours a week. One credit hour.* MR. RYCKMAN

55. Hydrology.—Stream-flow as applied to water-power development; rainfall; evaporation; run-off; methods of obtaining data and their use. Prerequisite, Course 26. *Two hours a week. Two credit hours.* MR. RYCKMAN

56. Hydraulic Engineering.—A continuation of Courses 51 and 55. The development and utilization of water power; the modern turbine; inspection of hydro-electric plants. Drawing room, *four hours a week. Two credit hours.* MR. RYCKMAN

57. Structural Design.—The design and construction of plain and reinforced concrete structures such as buildings, retaining walls, footings and short span bridges. Prerequisites, Mechanical Engineering 51, Course 52. *Three hours a week. Three credit hours.* MR. EVANS

58. Structural Design.—The design of typical steel members both simple and indeterminate, as they are found in buildings, bridges and miscellaneous structures. Prerequisite, Course 52. *Three hours a week. Three credit hours.* MR. EVANS

59. Structural Design.—The designing and detailing of simple steel structures, usually a roof truss and a plate girder. Prerequisite, Course 52. Drawing room, *six hours a week. Two credit hours.* MR. EVANS

60. Structural Design.—This course is closely coordinated with Course 57. Concrete structures or parts of structures are designed and detailed. Drawing room, *nine hours a week. Three credit hours.* MR. EVANS

61. Contracts and Specifications.—The ethical and legal relations among the parties affected by the making of a contract; a study of specifications of various elementary portions of engineering work. Prerequisite, Courses 52 and 57. *Two hours a week. Two credit hours.* MR. EVANS

63. Highway Economics.—State highway and municipal highway management as they affect organization, administration, and finance of streets and highways; economic factors of highway location, design and operation; traffic and operation expenses. Prerequisites, Courses 29 and 10. *Three hours a week. Three credit hours.* MR. LEAVITT

64. Construction Theory and Practice.—The theoretical and practical solution of many building construction problems. Prerequisite, Course 52. *Three hours a week. Three credit hours.* MR. EVANS

68. Highway Engineering.—Drawing room study of highway location and relocation, including plans of proposed improvement and construction of about one mile of highway with detailed estimates and specifications for the same. Also design of street intersections. Prerequisite, Course 63. Drawing room, *four hours a week. Two credit hours.* MR. LEAVITT

69 (70). Soils Laboratory.—Training in the technique of performing the usual types of soil tests. There is at present a strong demand for men with such training. Prerequisite, Course 27. Laboratory, *six hours a week. Two credit hours.* MR. GRAY

71. Sanitary Engineering.—A study of sewerage and the theory of design of sewage disposal works, followed by a brief study of water purification. Prerequisite, Course 33. *Two hours a week. Two credit hours.* MR. RYCKMAN

72. Highway Engineering.—Various highway problems; general survey of higher types of pavements; city planning; specifications; cost keeping; maintenance and repair work as discussed in engineering periodicals. Prerequisite, Course 63. *Two hours a week. Two credit hours.* MR. LEAVITT

74. Sanitary Engineering.—The completion of the study of water purification begun in Course 71; covers municipal and rural sanitation, sanitation of milk and foods, and the control of mosquitoes, flies, and rodents. Prerequisite, Course 71. *Two hours a week. Two credit hours.* MR. RYCKMAN

76. Applications of Soil Mechanics.—The methods of treating certain foundation problems to which soil mechanics provides a solution. The type of problems covered is more involved than that considered in Course 27. Prerequisite, Course 27. *Three hours a week. Three credit hours.* MR. GRAY

102. Advanced Theory of Structures.—The determination of stresses in statically indeterminate structures. Open only to those students who have passed Course 52 or its equivalent satisfactorily. *Three hours a week. Three credit hours.* MR. EVANS

125. Graduate Thesis.—Report upon some original investigation or design. *Time and credit to be arranged.* MR. EVANS AND STAFF

Courses To Be Offered at Summer Camp

7s. Highways and Railroads.—Preliminary and location surveys for railways and highways, particularly forest highways. Grades are established and grade stakes set. The preparation of maps from notes and calculation of earthwork. Offered at Forestry Summer Camp. Prerequisites, Courses 1 and 3. *Two credit hours.*

11s. Highway and Railroad Surveys.—Preliminary and location survey for a highway; a relocation survey for a railroad; stringlining curves; plotting; computing. Prerequisites, Courses 1, 3 and 10. *Three credit hours.*

23s. Geodetic and Topographic Surveying.—The methods and instru-

ments used in making large surveys. Prerequisites, Courses 1 and 3. *Two credit hours.*

31s. Hydrographic Surveying.—The principles underlying the measurement of flow of water in open channels. Prerequisites, Courses 1 and 3. *One credit hour.*

For **Geology and Geography Courses,** see page 121.

ELECTRICAL ENGINEERING

PROFESSORS CREAMER, HILL, CLOKE; ASSOCIATE PROFESSOR CRABTREE; ASSISTANT PROFESSORS PARSONS, LIBBEY, SEAL; MR. CROSBY, MR. PARKER, MR. MURRAY, MR. EDMUNDS, MR. HOWELLS, MR. TURNER

The Electrical Engineering curriculum consists of a logical sequence of courses which, beginning with the basic principles of electric circuits and machines and electronic apparatus, progresses in the advanced courses into the design and operating characteristics of equipment involved in both power and communication systems, as well as the functioning of the systems as a whole.

Opportunity is provided for the student to concentrate his work in either the power or communication division, but many students prefer to elect some courses in each and so achieve a broader training.

It is the aim of this curriculum to train the student in those fundamental principles which not only find application in electrical research, development, design, and other work of strictly engineering character, but also serve as substantial basic training for advancement to commercial and administrative positions with electric power and communication utilities, governmental agencies, and various manufacturing and industrial organizations.

Graduate Work in Electrical Engineering

A program of graduate study is available for a very limited number of students. As a condition for acceptance as a candidate for the degree of Master of Science in Electrical Engineering, the student must have obtained honor grades in a larger portion of his major undergraduate work. In the graduate program, minors in Mathematics and Physics will ordinarily be acceptable, and a thesis valued at six credit hours is recommended.

Freshman Year. See Page 163.

Sophomore Year

FALL SEMESTER

Subject			Hours Rec.	Lab. or Comp.	Cr.
Ee	1	Elements of Elec. Eng.	3	4	5
Ms	7	Calculus	5	0	5
Mt	3	Military Training	2	1	2
My	1	Modern Society	3	0	3
Pe	3	Phy. Education	0	2	0
Py	1	General Psychology	2	2	3
Sh	1	Public Speaking	2	0	2

SPRING SEMESTER

Subject			Hours Rec.	Lab. or Comp.	Cr.
Ce	6	Surveying	2	3	3
Ee	2	Elements of Elec. Eng.	3	4	5
Ms	8	Calculus	5	0	5
Mt	4	Military Training	2	1	2
My	2	Modern Society	3	0	3
Pe	4	Phy. Education	0	2	0
Py	2	General Psychology	2	2	3

Junior Year

			FALL SEMESTER Hours					SPRING SEMESTER Hours		
		Subject	Rec.	Lab. or Comp.	Cr.		Subject	Rec.	Lab. or Comp.	Cr.
Ee	13	Electronics	3	3	4	Ee 22	Telephone Comm.	2	0	2
Ee	25	A-C Circuits	2	2	3	Ee 24	Telephone Laboratory	0	3	1½
Ee	27	A-C Circuit Meas.	1	3	2½	Ee 26	D-C Machines	3	0	3
Eh	5	Technical Comp.	2	0	2	Ee 28	Direct Current Lab.	0	3	1½
Es	5	Comp. Econ. Systems	3	0	3	Eh 10	Modern Literature	2	0	2
Me	53	Applied Mechanics	3	0	3	Me 28	Kinematics	3	0	3
		Options—One required				Me 54	Applied Mechanics	3	0	3
Es	53	Money & Banking	3	0	3		Options—One required			
Ms	57	Eng. Mathematics I	3	0	3	Ba 56	Business Law	3	0	3
						Ce 26	Hydraulics	3	0	3
						Ms 58	Eng. Mathematics II	3	0	3

Senior Year

			Rec.	Lab. or Comp.	Cr.			Rec.	Lab. or Comp.	Cr.
Ee	51	Alt. Cur. Machinery	3	2	4		Options—Six required			
Ee	75	Electrical Testing	1	3	2½	Ba 60	Personnel Mgt.	3	0	3
Me	43	Heat Engineering	3	0	3	Ee 50	Thesis			1-3
		Options—Two required				Ee 60	Adv. Elec. Machinery	3	0	3
Ee	49	Thesis			1-3	Ee 64	Elec. Motive Power	3	0	3
Ee	59	Elec. Machine Design	2	2	3	Ee 76	Electrical Testing	1	3	2½
Ee	61	Illuminating Eng.	2	0	2	Ee 80	UHF Systems	2	0	2
Ee	65	Elec. Power Systems	3	3	4	Ee 82	Communication Eng.	0	4	2
Ee	81	Communication Eng.	0	4	2	Ee 84	Communication Lab.	0	2	1
Ee	85	Radio Engineering	2	2	3	Ee 86	Radio Engineering	3	0	3
Ee	87	Radio Laboratory	0	3	1½	Ee 88	Radio Laboratory	0	3	1½
Ee	89	Electro-Acoustics	2	0	2	Ee 92	Transients	2	0	2
Es	33	Labor Problems	3	0	3	Me 42	Mechanical Lab.	0	3	1½
Ms	59	Vector Analysis	3	0	3	Me 84	Ind. Mgt. & Safety Eng.	3	0	3
						Me 86	Power Plants	3	0	3
						Ms 60	Functions of a Complex Variable	3	0	3

Courses in Electrical Engineering

1; 2. Elements of Electrical Engineering.—Fundamentals of electric, magnetic, and dielectric circuits; single phase a-c circuits; electrical measurements. Prerequisites, Physics 1, 2 and Mathematics 1, 3, 4. Classroom, *three hours a week;* computation, *two hours a week;* laboratory, *two hours a week. Five credit hours.* MR. LIBBEY, MR. CROSBY, AND STAFF

1p; 2p. Elements of Electrical Engineering.—Same as Course 1, 2 except that laboratory is omitted. Classroom, *three hours a week;* computation, *two hours a week. Four credit hours.*

13. Electronics.—Theory and application of electron tubes. Elementary principles of vacuum and gas diodes, triodes, and multi-grid tubes, photocells, rectifiers, oscillators, and electron tube circuits. Classroom, *three hours a week;* laboratory, *three hours a week. Four credit hours.* MR. PARSONS, MR. HOWELLS

22. Telephone Communication.—Elements of speech and hearing; characteristics of subscribers' sets, local and common battery circuits, dial systems,

repeaters and carrier current; study of the infinite line. Prerequisite, Course 2. Course 24 is required concurrently of majors. Classroom, *two hours a week. Two credit hours.* MR. CREAMER, MR. TURNER

24. Telephone Laboratory.—Microphonic efficiency of telephone apparatus; measurements of articulation and audition; local and common battery systems; phantom and composite circuits; repeaters; transmission testing. Course 22 is required concurrently. Laboratory, *three hours a week. One and one-half credit hours.* MR. CROSBY, MR. TURNER

25. A-C Circuits.—Analysis of single phase and polyphase circuits; non-sinusoidal waves; elements of electrical transmission; introduction to transient phenomena. Prerequisite, Course 2. Classroom, *two hours a week;* computation, *two hours a week. Three credit hours.* MR. PARSONS, MR. LIBBEY

26. Theory and Performance of D-C Machines.—Prerequisite, Course 2. Classroom, *three hours a week. Three credit hours.* MR. CRABTREE

27. A-C Circuit Measurements.—Testing of a-c circuits at power frequencies. Course 25 is required concurrently. Classroom, *one hour a week;* laboratory, *three hours a week. Two and one-half credit hours.*
MR. CROSBY, MR. MURRAY

28. Direct Current Laboratory.—Operation and testing of direct-current motors and generators. Course 26 is required concurrently. Laboratory, *three hours a week. One and one-half credit hours.* MR. MURRAY, MR. PARKER

41 (42). Electric Circuits.—Basic course for non-electricals in direct current circuits; magnetic circuits; induced electromotive force; alternating current circuits. Classroom, *two hours a week. Two credit hours.*
MR. CROSBY, MR. MURRAY

43 (44). Applied Electronics.—Theory and applications of electron tubes. Elementary laboratory tests. Prerequisite, Course 41 (42). Classroom, *one hour a week;* classroom, *one hour a week alternating with the laboratory two hours a week. Two credit hours.* MR. SEAL, MR. HOWELLS, MR. EDMUNDS

45 (46). Electric Machinery.—Principles and operating characteristics of direct and alternating current machinery. Course 41 (42) prerequisite. Classroom, *two hours a week. Two credit hours.* MR. SEAL, MR. CROSBY

47 (48). Electrical Laboratory.—Operation of direct and alternating current machinery. Course 45 (46) prerequisite or concurrent. Laboratory, *three hours a week. One and one-half credit hours.* MR. MURRAY

49. 50. Thesis.—The study of and report upon some original investigation or design. See regulations regarding degrees. *One to three credit hours.*
MR. CLOKE, MR. HILL, MR. CREAMER

51. Alternating Current Machinery.—Theory, construction, and operating characteristics of alternating-current motors, generators, transformers, and rectifiers. Utilization of polyphase power. Prerequisites, Courses 25 and 26. Classroom, *three hours a week;* computation, *two hours a week. Four credit hours.*
MR. CRABTREE

59. Electric Machine Design.—A study of the principles and practice of electric machine design, with emphasis on basic topics such as core dimensions and winding layouts. Course 51 is required concurrently. Classroom, *two hours a week;* computation, *two hours a week. Three credit hours.* MR. HILL

60. Advanced Electric Machinery.—Advanced problems of electrical, mechanical, and thermal design. Calculations and analyses of machine performance

from test results and from design data. Course 59 is prerequisite. Classroom, *three hours a week. Three credit hours.* MR. HILL

61. Illuminating Engineering.—General illumination theory; different types of lamps; light, photometry, illumination calculations; problems of interior and exterior lighting. Prerequisite, Course 2. Classroom, *two hours a week. Two credit hours.* MR. PARSONS

64. Electric Motive Power.—Analysis of the major problems of electric drive in railway, highway, and marine transportation, and in typical industrial installations, with particular attention to the special features of machinery and refinements of control employed in exacting applications. Prerequisite, Course 51. Classroom, *three hours a week. Three credit hours.* MR. HILL

65. Electric Power Systems.—Introduction to current practice in the generation, transmission, and distribution of electric power, with emphasis on the technical problems of long lines and system networks and on the economic aspects of plant design and operation. Classroom, *three hours a week;* computation, *three hours a week. Four credit hours.* MR. HILL

75; 76. Electrical Testing.—Experimental study of polyphase networks. Commercial tests and advanced investigations of alternating-current generators, motors, transformers, and converters. Classroom, *one hour a week;* laboratory, *three hours a week. Two and one-half credit hours.* MR. CRABTREE

80. U.H.F. Systems.—Principles of television apparatus; electronic navigation; pulse modulation systems; wave guide theory and applications. Prerequisite, Course 85. Classroom, *two hours a week. Two credit hours.* MR. CREAMER

81; 82. Communication Engineering.—Network theory; transformers; attenuators; filters; equalizers; transmission losses; application of hyperbolic functions to transmission line problems; cable and open wire lines; special transmission circuits. Prerequisite, Course 22. Computation, *four hours a week. Two credit hours.* MR. CREAMER, MR. LIBBEY

84. Communication Laboratory.—Advanced electronic circuits; magnetron, klystron, and V.H.F. triode oscillators. Measurement techniques. Laboratory, *two hours a week. One credit hour.* MR. LIBBEY, MR. EDMUNDS

85; 86. Radio Engineering.—Inductance coils, condensers, and resistors for radio frequencies; vacuum-tube theory; analysis of oscillatory circuits and methods of excitation; radiation and transmission; receiver and transmitter circuits; amplitude, frequency, and phase modulation. Prerequisite, Course 22. Course 87 is required concurrently with course 85. First semester: Classroom, *two hours a week;* computation, *two hours a week. Three credit hours.* Second semester: Classroom, *three hours a week. Three credit hours.* MR. PARSONS, MR. SEAL

87; 88. Radio Laboratory.—Frequency measurements; radio-frequency amplifiers; tests of tube transmitters and receivers; speech input systems; filters; modulation; radio direction finding; antenna arrays; field strength measurements. Courses 85; 86 required concurrently. Laboratory, *three hours a week. One and one-half credit hours.* MR. LIBBEY, MR. SEAL

89. Electro-Acoustics.—This course, which is closely correlated with Courses 81, 85, and 86, deals with studio and theater acoustics, sound recording, and the dynamical systems of microphones, receivers, and loud speakers. Prerequisite, Course 22. Classroom, *two hours a week. Two credit hours.* MR. LIBBEY

92. Transients.—Advanced mathematical analysis of transient phenomena with emphasis on the methods of Heaviside's operational calculus. Classroom, *two hours a week. Two credit hours.* MR. CLOKE, MR. HILL

125. Graduate Thesis.—Selected research problems. *Three to six credit hours.* MR. HILL, MR. CREAMER

161; 162. Advanced Electric Power Apparatus.—Critical discussion of advanced theories and special types of electric machinery and allied electromagnetic devices. Reviews of current developments in the design and application of such apparatus. Prerequisite, Course 60. Classroom, *two or three hours a week. Two or three credit hours.* MR. HILL

165; 166. Advanced Electric Power Systems.—Stability studies and fault current analyses of power networks. Theory of lightning surges and other system disturbances. Advanced problems of plant and line design, protection, and operation. Prerequisite, Course 65. Classroom, *two or three hours a week. Two or three credit hours.* MR. HILL

175. Electrical Laboratory.—Advanced tests of electrical machines and circuits as related to design and development. Performance studies involving the use of the oscillograph. Prerequisites, Courses 51, 60, and 76. Course 161 is concurrent. Classroom, *one hour a week;* laboratory, *three hours a week. Two and one-half credit hours.* MR. HILL

185. Communication Networks.—Advanced study of passive networks; transformer and transition losses; high-quality circuits; advances in communication from study of current technical literature. Prerequisite, Course 81. Classroom, *two hours a week. Two credit hours.* MR. CREAMER

186. Ultra-High Frequency Phenomena.—Advanced study of the generation, transmission and radiation of U.H.F. energy. Prerequisite, Course 86. Classroom, *two hours a week. Two credit hours.* MR. SEAL

187. Radio Seminar.—A thorough, critical study of a limited number of important current developments in radio engineering. For graduate students who have specialized in electrical communication. Prerequisite, Courses 85, 86. Classroom, *two hours a week. Two credit hours.* MR. CREAMER

188. Circuits Laboratory.—Experimental work based on theory treated in Courses 185 and 186, which are prerequisite or concurrent. Laboratory, *three hours a week. One and one-half credit hours.* MR. CREAMER

ENGINEERING PHYSICS

PROFESSOR BENNETT; ASSOCIATE PROFESSORS CROFUTT, BISCOE; ASSISTANT PROFESSOR OLESON; MR. COFFIN, MR. TODD, MR. MAXIM

This curriulum is an answer to the growing demand on the part of industry for college men trained in physics in an engineering atmosphere. It recognizes the fact that for certain students undergraduate specialization in a single engineering field is not a rigid requirement for success in industrial work. In such cases, however, concentration on the scientific principles underlying engineering is often assumed. This program is basically one of applied science supplemented by a strong minor in one or more of the well-defined engineering fields. It is developed around a framework of required courses in intermediate and advanced physics, mathematics, and chemistry in addition to certain strictly engineering courses, some required and some elected in the last two years. Thus the emphasis is placed upon both engineering and physics.

The curriculum is also suited for those students who, by virtue of their ability and interest, may be preparing to do graduate work.

Graduate Work in Physics

Graduate opportunities and requirements for the Master of Science degree in Physics are given on pages 141 and 201-205.

Freshman Year. See Page 163.

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab. or Comp.	Cr.				Rec.	Lab. or Comp.	Cr.
Me	7	Machine Tool Lab.	0	4½	1½	Ch	40a	Quant. Anal.	1	6	3
Ms	7	Calculus	5	0	5	Me	8	Machine Tool Lab.	0	4½	1½
Mt	3	Military Training	2	1	2	Ms	8	Calculus	5	0	5
My	1	Modern Society	3	0	3	Mt	4	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0	My	2	Modern Society	3	0	3
Ps	17	Intermed. Physics	2	4	4	Pe	4	Phy. Education	0	2	0
Sh	1	Public Speaking	2	0	2	Ps	18	Intermed. Physics	2	4	4
*Suggested Electives (Choose one subject)						*Suggested Electives (Choose one subject)					
*As	15	Gen. Astronomy	3	0	3	*As	16	Gen. Astronomy	3	0	3
*Gm	19	German for Chem.	3	0	3	*Gm	20	German for Chem.	3	0	3

Junior Year

			Rec.	Lab. or Comp.	Cr.				Rec.	Lab. or Comp.	Cr.
Eh	5	Technical Comp.	2	0	2	Eh	10	Modern Lit.	2	0	2
Es	5	Comp. Econ. Syst.	3	0	3	Me	54	Mechanics	3	0	3
Me	53	Mechanics	3	0	3	Ms	58	Eng. Math. II	3	0	3
Ms	57	Eng. Math. I	3	0	3	*Ps	66	Electronic Phen.	3	0	3
Ps	53	Elec. Meas.	0	4	2	Ps	72	Optics	3	0	3
Ps	55	Elec. and Mag.	3	0	3	Ps	76	Phys. Meas.	0	4	2
*Ch	71	Physical Chem.	2	6	5	*Ch	72	Physical Chem.	2	6	5
*Ee	1p	Els. Elec. Eng.	3	2	4	*Ee	2p	Els. Elec. Eng.	3	2	4
*Me	21	Mats. of Eng.	2	0	2	*Me	22	Els. Mech. Eng.	2	0	2
						*Me	26	Mech. Lab.	0	3	1½

Senior Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours Rec.	Lab. or Comp.	Cr.	Subject			Hours Rec.	Lab. or Comp.	Cr.
*Ms	59	Vector Anal.	3	0	3	*Ms	60	Functions of a Complex Variable	3	0	3
Ps	69	Modern Physics	3	0	3	*Ps	59	Sound	3	0	3
Ps	81	Advanced Lab.	0	6	3	Ps	62	Heat and Therm.	3	0	3
						Ps	82	Advanced Lab.	0	6	3
						Ps	98	Seminar	1	0	1
*Ch	51a	Organic Chem.	3	0	3	*Ch	84	Metallurgy (recommended unless Ch 71 is elected)	3	0	3
*Ee	13	Electronics	3	3	4						
*Ee	25	A-C Circuits (required if Ee 1p, 2p are elected earlier)	2	2	3	*Ee	26	D-C Machines (required if Ee 1p, 2p are elected earlier)	3	0	3
*Ee	27	A-C Circuits Lab.	1	3	2½	*Ee	28	Direct Current Lab.	0	3	1½
*Ee	41	Elec. Circuits (required unless Ee 1p, 2p, 25, 26 are elected)	2	0	2	*Ee	46	Elec. Machinery (required unless Ee 1p, 2p, 25, 26 are elected)	2	0	2
*Me	43	Heat Engineering	3	0	3						

* Courses marked with the asterisk are to be considered as recommended electives. Not all are required. It is expected that during the junior and senior years a normal registration will be from 18 to 20 hours each semester. Students who may continue with graduate work are strongly advised to take at least one year of German.

Courses in Engineering Physics. See Page 139.

GENERAL ENGINEERING

This curriculum is designed for students who wish to prepare themselves for posts in production and in industrial engineering. The engineering courses embrace foundation studies in chemical, civil, electrical, and mechanical engineering. The humanistic studies are the same as those required for all engineering students. In addition there is a selected group of studies in economics, business administration, history and management.

The curriculum also permits a student, completing certain electives in either Economics or History and Government beginning in the sophomore year, to obtain the degree of Master of Science in Economics or in History and Government by an additional year of study after obtaining the B.S. in General Engineering.

Students must attain a scholastic standing distinctly above average as freshmen in order to be admitted to the course, and must maintain such standing throughout the course.

The Dean of the College is the adviser and registering officer for students in this course.

Freshman Year. See Page 163.

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab. or Comp.	Cr.				Rec.	Lab. or Comp.	Cr.
Ch	31	Qualitative Anal.	2	3	3	Ch	40	Quant. Anal.	1	8	4
Ee	41	Elec. Circuits	2	0	2	Ee	44	Applied Electronics	1½	1	2
Ms	7	Calculus	5	0	5	Ms	8	Calculus	5	0	5
Mt	3	Military Training	2	1	2	Mt	4	Military Training	2	1	2
My	1	Modern Society	3	0	3	My	2	Modern Society	3	0	3
Pe	3	Phy. Education	0	2	0	Pe	4	Phy. Education	0	2	0
Ps	17	Intermed. Physics	2	4	4	Ps	18	Intermed. Physics	2	4	4

Junior Year

				Lab.						Lab.	
			Rec.	or Comp.	Cr.				Rec.	or Comp.	Cr.
As	11	Pract. Astronomy	2	1	2½	Ba	10	Accounting	2	2	3
ChE	33	Stoichiometry	3	0	3	Ce	6	Surveying	2	3	3
Ee	45	Elec. Machinery	2	0	2	Ee	48	Elec. Lab.	0	3	1½
Me	51	Mechanics	5	0	5	Eh	6	Tech. Comp.	2	0	2
Py	1	Gen. Psychology	2	2	3	Me	52	Mechanics	5	0	5
Sh	1	Public Speaking	2	0	2	Py	2	Gen. Psychology	2	2	3

Senior Year

				Lab.						Lab.	
			Rec.	or Comp.	Cr.				Rec.	or Comp.	Cr.
Ba	55	Business Law	3	0	3	Ce	52	Theory of Structures	3	0	3
Eh	15	Masterpieces of Eng. and American Lit.	3	0	3	Gy	16	Geology	2	1½	2½
Hy	3	U. S. History	3	0	3	Hy	4	U. S. History	3	0	3
Me	43	Heat Engineering	3	0	3	Me	42	Mechanical Lab.	0	3	1½
Ms	55	Dif. Equations	3	0	3			Electives	—	—	—
		Elective	—	—	—						

MECHANICAL ENGINEERING

PROFESSORS WATSON, PRAGEMAN; ASSOCIATE PROFESSOR SPARROW; ASSISTANT PROFESSORS HARVEY, HILL, WEBSTER; MR. PERKINS, MR. JOHNSON, MR. SCHOFIELD, MR. WITHAM, MR. GERWECK, MR. FLANAGAN, MR. MURPHY, MR. HOPKINS

The Mechanical Engineering curriculum is broad, highly technical, and designed to give the student the necessary background to enter any of the various fields in industry. Emphasis is placed on the fundamental principles underlying the numerous fields of Mechanical Engineering and their application to practical engineering problems. The fields of engineering include aeronautical, automotive, steam power, transportation, refrigeration, heating and ventilating, Diesel engines, industrial safety, sales, research, and management. The mechanical engineer may be responsible, either directly or in an administrative capacity, for the design, development, production, installation, operation, and maintenance of machines for industries in all of the above fields.

Graduate Work in Mechanical Engineering

The program for graduate study will vary in each case since the courses required as a background for the thesis will depend upon the specific phase of mechanical engineering chosen for the investigation. Advanced courses in mathematics are usually required in all programs.

Freshman Year. See Page 163.

Sophomore Year

FALL SEMESTER						SPRING SEMESTER					
Subject			Hours			Subject			Hours		
			Rec.	Lab. or Comp.	Cr.				Rec.	Lab. or Comp.	Cr.
Ce	5	Surveying	2	3	3	Eh	10	Modern Literature	2	0	2
Md	3	Desc. Geom.	0	4	2	Md	4	Advanced Drafting	0	4	2
Me	3	Gage Lab. & Pattern Shop	0	4½	1½	Me	2	Materials Lab.	0	4½	1½
Me	21	Materials of Eng.	2	0	2	Me	22	Elem. of Mech. Eng.	2	0	2
Ms	7	Calculus	5	0	5	Me	26	Mechanical Lab.	0	3	1½
Mt	3	Military Training	2	1	2	Ms	8	Calculus	5	0	5
My	1	Modern Society	3	0	3	Mt	4	Military Training	2	1	2
Pe	3	Phy. Education	0	2	0	My	2	Modern Society	3	0	3
Sh	1	Public Speaking	2	0	2	Pe	4	Phy. Education	0	2	0

Junior Year

			Rec.	Lab. or Comp.	Cr.				Rec.	Lab. or Comp.	Cr.
Eh	5	Technical Comp.	2	0	2	Ba	56	Business Law	3	0	3
Es	5	Comp. Econ. Syst.	3	0	3	Ee	42	Electric Circuits	2	0	2
Me	7	Machine Tool Lab.	0	4½	1½	Me	8	Machine Tool Lab.	0	4½	1½
Me	23	Kinematics	3	3	4	Me	24	Machine Design	2	3	3
Me	33	Thermodynamics	3	0	3	Me	34	Thermodynamics	3	0	3
Me	37	Mechanical Lab.	0	3	1½	Me	38	Mechanical Lab.	0	3	1½
Me	51	Applied Mechanics	5	0	5	Me	52	Applied Mechanics	5	0	5

Senior Year

			Rec.	Lab. or Comp.	Cr.				Rec.	Lab. or Comp.	Cr.
Ec	43	Appl. Electronics	1½	1	2	Ee	46	Electric Machinery	2	0	2
Me	59	Fluid Mechanics	3	0	3	Ee	48	Elec. Power Lab.	0	3	1½
Me	71	Mechanical Lab.	0	3	1½	Me	72	Mechanical Lab.	0	3	1½
Me	81	Modern Turbines	2	3	3	Me	84	Ind. Mgt. & Safety Eng.	3	0	3
Me	87	Adv. Machine Design	1	3	2	Me	86	Power Plants	3	0	3
Me	91	Heating & Air Conditioning	3	0	3	Me	96	Seminar	1	0	1
Me	93	Int. Combustion Engines	3	0	3			Options			
Py	3	Appl. Psychology	2	0	2	Me	88	Dynamics of Machines	2	0	2
						Me	92	Aerodynamics	3	0	3
						Ms	57	Eng. Mathematics	3	0	3
								Elective	—	—	—

Courses in Mechanical Engineering

1 (2) Materials Laboratory.—Foundry and metal work with hand and machine tools; electric and acetylene welding. Lectures and demonstrations on basic foundry and welding practice, and tempering of metals. Laboratory work, *four and one-half hours a week. One and one-half credit hours.* MR. HOPKINS

3 (4). Gage Laboratory and Pattern Work.—Gaging projects to familiarize the student with tolerances and use of inspection gages. Making of complete patterns and core boxes from drawings; woodworking practice. Lectures and demonstrations. Laboratory work, *four and one-half hours a week. One and one-half credit hours.* MR. WITHAM

7; 8. Machine Tool Laboratory.—A small piece of machinery is manufactured and assembled to demonstrate the operation and use of the various machine tools. Stress is laid upon the selection of feeds, speeds, and depths of cut for various metals, in the different operations. Laboratory work, *four and one-half hours a week. One and one-half credit hours.* MR. PERKINS

21. Materials of Engineering.—Properties of ferrous and non-ferrous materials; their structure, use, and the processes of manufacture; heat treating of metals; methods of testing various materials. Classroom, *two hours a week. Two credit hours.* MR. JOHNSON, MR. GERWECK, MR. MURPHY

22. Elements of Mechanical Engineering.—A course to familiarize the student with mechanical apparatus and power plant equipment; engineering calculations relative to heat, power, work, and mechanical and electrical energy. Classroom, *two hours a week. Two credit hours.* MR. SCHOFIELD, MR. SMITH

23. Kinematics.—Motion, velocity, and acceleration of machine parts, supplemented by drawings of cams, gear teeth, and graphical studies of kinematical problems. Classroom, *three hours a week;* computation, *three hours a week. Four credit hours.* MR. PRAGEMAN, MR. SCHOFIELD

24. Machine Design.—The design of machines; proportioning of parts for strength, rigidity, etc. Prerequisites, Courses 23 and 51. Classroom, *two hours a week;* computation, *three hours a week. Three credit hours.* MR. JOHNSON

26. Mechanical Laboratory.—Computation and laboratory experiments on calibration and testing of mechanical equipment. Laboratory, *three hours a week. One and one-half credit hours.* MR. SCHOFIELD, MR. SMITH

27 (28). Kinematics.—A shorter course than 23, arranged for electrical engineers. Classroom, *three hours a week. Three credit hours.*

MR. MURPHY, MR. SMITH

33. Thermodynamics.—Basic laws of thermodynamics; air compressors; combustion; vapor laws; steam tables and steady flow analysis. Illustrative practical problems. Prerequisites, Mathematics 8 and Physics 1, 2. Classroom, *three hours a week. Three credit hours.* MR. HILL

34. Thermodynamics.—Rankine's cycle; steam enigne cycles; thermal efficiencies; flow of steam and air; steam nozzles; humidity and hygrometry and refrigeration. Prerequisite, Course 33. Classroom, *three hours a week. Three credit hours.* MR. HILL

37; 38. Mechanical Laboratory.—Tests of materials, heating value of liquid and gaseous fuels, steam calorimetry, thermal efficiency, economy, and heat balance test of steam engines, steam turbines, and gas engines. Courses 33, 34 are required concurrently. Laboratory, *three hours a week. One and one-half credit hours.* MR. SPARROW

41 (42). Mechanical Laboratory.—For non-mechanical engineers. Calibration of instruments; testing strength of materials; testing of steam engines, gas engines, hydraulic testing. Prerequisite, Course 43 or 44 or ChE 37. Laboratory, *three hours a week. One and one-half credit hours.* MR. WEBSTER

43 (44). Heat Engineering.—A short course for non-mechanical engineers covering the laws of thermodynamics and their application to heat motors, air compressors, refrigerating machinery, and power-plant equipment. Prerequisites, Mathematics 8 and Physics 2. Classroom, *three hours a week. Three credit hours.* MR. SPARROW, MR. WEBSTER

49. Mechanical Laboratory.—For seniors in Civil Engineering. Testing of strength of materials; measurement of flow of water over weirs and through orifices and nozzles; calibration of venturi meters. Prerequisite, Civil Engineering 26. Laboratory, *three hours a week. One and one-half credit hours.* MR. SPARROW

50. Thesis.—*Three credit hours.* MR. WATSON AND STAFF

51; 52. Applied Mechanics.—The fundamental principles of statics, kinematics, and kinetics, with applications to practical problems; stresses and strains in bodies subject to tension, compression, and shearing; the common theory of beams, including shearing force, bending moment, and elastic curves; torsional stresses and theories of stress in long columns. Classroom, *five hours a week. Five credit hours.* MR. HARVEY, MR. SCHOFIELD, MR. FLANAGAN

53; 54. Applied Mechanics.—The fundamental principles of statics, kinematics, and kinetics, with applications to practical problems; the study of simple stresses and strains with such applications as the time permits. Classroom, *three hours a week. Three credit hours.* MR. SCHOFIELD, MR. FLANAGAN, MR. SMITH

57; 58. Advanced Mechanics.—Single-degree freedom systems; free and forced vibrations; application to measuring instruments; systems with more than one degree of freedom; calculation of natural frequency of various objects; torsional vibrations in internal combustion engines; self-excited vibrations. Classroom, *three hours a week. Three credit hours.* MR. HARVEY

59. Fluid Mechanics.—Statics and dynamics of fluids. Compressible and non-compressible fluids. Measurement of fluid flow. Laws of dynamic similitude. Laminar and turbulent flow. Applications to lubrication, aerodynamics, and hydrodynamics. Prerequisites, Courses 33 and 51. Classroom, *three hours a week. Three credit hours.* MR. PRAGEMAN

71; 72. Mechanical Laboratory.—Tests of condensers, boilers, air-compressors, pumps, fans, hydraulic testing. Prerequisite, Course 38. Laboratory, *three hours a week. One and one-half credit hours.* MR. SPARROW, MR. SMITH, MR. GERWECK

78. Hydraulic Laboratory.—For students taking Hydraulic Elective in Civil Engineering. Testing of impulse and reaction water wheels, flow measurement and friction in pipes and channels, etc. Prerequisite, Course 39. Laboratory, *three hours a week. One and one-half credit hours.* MR. SPARROW

81. Modern Turbines.—A continuation of Courses 33 and 34, dealing with steam and gas turbines; considerations affecting the design and efficiency of operation of the various types. Classroom, *two hours a week;* computation, *three hours a week. Three credit hours.* MR. WEBSTER

84. Industrial Management and Safety Engineering.—The management of industrial enterprises, layout of industrial buildings, time and motion study, wage systems and selection of personnel, labor problems, finance; causes of accidents

and their prevention, the organization and administration of safety programs. Classroom, *three hours a week. Three credit hours.* MR. HILL

86. Power Plants.—Design, costs, operating expenses, and economics of steam and gas power plants. Prerequisite, Course 81. Classroom, *three hours a week. Three credit hours.* MR. WATSON

87. Advanced Machine Design.—A continuation of Course 24, including the execution of the design of some typical machines. Prerequisites, Courses 23 and 24. Classroom, *one hour a week;* computation, *three hours a week. Two credit hours.* MR. PRAGEMAN, MR. JOHNSON

88. Dynamics of Machines.—The forces due to reciprocating and rotating masses with special application to balancing high-speed machinery, designing governors and flywheels. Prerequisites, Courses 23, 24, and 87. Classroom, *two hours a week. Two credit hours.* MR. PRAGEMAN

91. Heating and Air-Conditioning.—Heat resistance of building materials, calculation of heat losses through various types of walls, windows, etc., heating systems, ventilating systems, humidification. Prerequisite, Course 34 or 43. Classroom, *three hours a week. Three credit hours.* MR. WATSON, MR. WEBSTER

92. Aerodynamics.—Flow of an ideal fluid; application of dimensional analysis to engineering problems; Prandtl's wing theory; properties of airfoils; engine and propeller characteristics; airplane performance calculations; propeller theory. Prerequisites, Courses 52 and 59. Classroom, *three hours a week. Three credit hours.* MR. FLANAGAN

93. Internal Combustion Engines.—Types, general theory of design and operation, fuels and combustion, carburation, relative efficiencies, detonation and knock testing, cooling and lubrication. Prerequisite, Course 33. Classroom, *three hours a week. Three credit hours.* MR. JOHNSON

94. Hydraulic Machinery.—Prerequisites, Courses 52 and 59. Classroom, *three hours a week. Three credit hours.* MR. PRAGEMAN

96. Seminar.—Coordination of various courses, comprehensive problems, short talks by students on various engineering topics. Classroom, *one hour a week. One credit hour.* MR. WATSON

101 (102). Metallography.—Classroom, *one hour a week;* laboratory, *four hours a week. Three credit hours.* MR. WATSON

103 (104). Advanced Internal Combustion Engines.—Special studies on Diesel and Otto cycle engines. Prerequisite, Course 93. *Credit, arranged.* MR. WATSON

ENGINEERING DRAFTING

PROFESSOR KENT; ASSOCIATE PROFESSOR MCNEARY; MR. CLIFFORD, MISS KELSO, MR. KINGSBURY, MR. HODGES

1. Fundamentals of Drafting.—Technical sketching, care of drawing instruments, and their use in elementary problems involving lines, circles, irregular curves, orthographic projections and tracings. Drafting room, *four hours a week. Two credit hours.* MR. KENT AND STAFF

2. Elementary Machine Drafting.—A continued study of the methods of orthographic projection, isometric projection, oblique projection and practice in making working drawings, tracings and reproductions. Prerequisite, Course 1. Drafting room, *four hours a week. Two credit hours.* MR. KENT AND STAFF

3. Descriptive Geometry.—The elementary principles and problems of

descriptive geometry, including intersections and developments. Prerequisite, Course 2. Recitation and drafting room, *four hours a week. Two credit hours.*

MR. KENT AND STAFF

4. Advanced Drafting.—Drafting room methods and procedure; technical sketching and making working drawings of machine parts. Architectural sketching and drawings or nautical sketching and drawings may be supplemented for the machine parts under certain conditions. Prerequisite, Course 2. Drafting room, *four hours a week. Two credit hours.* MR. KENT, MR. CLIFFORD, MR. KINGSBURY

7. Projections and Graphical Methods.—A more general course than that given engineering students but designed especially for students desiring a general knowledge of drafting that they may read and understand sketches, drawing and prints. This course covers the principles of orthographic and oblique projections, tracings and working sketches. NOT OPEN TO ENGINEERING OR FORESTRY STUDENTS. Lecture and drafting room, *four hours a week. Two credit hours.* MR. KENT, MR. MCNEARY

8. Graphical Methods in Business.—Introduction to the methods of constructing and interpreting graphical business charts. Pictorial, bar, rectilinear, ratio, logarithmetic, polar, alignment, and other charts are constructed and studied as well as special business forms. Prerequisite, Course 1 or 7. Lecture and drafting room, *four hours a week. Two credit hours.* MR. KENT, MR. MCNEARY

9; 10. Agricultural Drafting.—Especially for students in Agriculture and others who are not engineers. This course combines the fundamental principles of Courses 1 and 2. Drafting room, *four hours a week. Two credit hours.*

MR. KENT AND STAFF

12. Forestry Drafting.—Continuation of orthographic projections with isometric and perspective projections, topographical symbols and their application, map making and enlarging and reproduction of drawings. Prerequisite, Course 1. Drafting room, *four hours a week. Two credit hours.* MR. MCNEARY

54a. Shades and Shadows.—The principles of the casting of shadows on and by architectural objects. A half-semester course. Prerequisite, Course 2. Drafting room, *four hours a week. One credit hour.* MR. KENT, MR. MCNEARY

54b. Perspective.—The principles of architectural perspective and the making of the same. A half-semester course. Prerequisite, Course 2. Drafting room, *four hours a week. One credit hour.* MR. KENT, MR. MCNEARY

LECTURE COURSES

DEAN CLOKE

Gc 5. Orientation.—A course of lectures, given during the first semester of the freshman year, to acquaint Technology students with various fields of study and occupational opportunities. Lectures given by Technology and other University staff members, practicing engineers, and business and professional men. A final examination will be given covering the lectures and reading assignments in a specified textbook. Open to the public. *One-half credit hour.*

Maine Technology Experiment Station

General Statement.—The Station, established in June, 1915, is under the direct control of the Dean of the College of Technology and the heads of the departments. The Station offices are located in Wingate Hall. For personnel see page 33.

Income.—The income of the Station is derived from University appropriations and from the State Highway Commission.

Object.—The objects of the Station are to carry on practical research in engineering subjects, make investigations for State boards and municipal authorities, furnish scientific information to the industries of the State, and distribute accurate scientific knowledge to the people of the State.

Equipment.—The Station is equipped with laboratories and apparatus for the conduct of research in the following fields: Chemistry, Chemical Engineering (including pulp and paper); Civil Engineering (including geology and soil mechanics); Electrical Engineering; Engineering Physics; Mechanical Engineering.

Investigations.—Research is carried on in the fields of chemical, civil, electrical, and mechanical engineering, geology, and miscellaneous technical fields. Much work has been done in the field of statistical analysis of data on concrete and highway materials.

Publications.—The Station issues two series of publications: *Bulletins* and *Papers*. Forty-one *Bulletins* and fifty-one *Papers* have been published. In general, the *Papers* have been issued as reprints from technical journals and magazines.

Military Science and Tactics

PMS&T, Colonel Fuller; Associate PMS&T, Lieutenant Colonel Glassen; Assistant PMS&T, Major Healy, Major Brophy, Major Smith, Captain Andrews; Instructors, Master Sergeant Rinkaus, Master Sergeant Russell, Master Sergeant Detweiler, Master Sergeant Gorum, Master Sergeant Abraham, First Sergeant Rogers, Technical Sergeant Klein, Technical Sergeant Jones, Technical Sergeant Rhoads

Military instruction for freshmen and sophomores is required by law. The program includes subjects common to all branches of the Army as well as specialized study for Advanced Students in Infantry, Antiaircraft Artillery, and Signal Corps.

Uniforms, arms, and military equipment are furnished by the Government. The uniforms are of the type prescribed for the ROTC by the War Department. They are worn at drill and at such other times as may be prescribed by the Professor of Military Science and Tactics (PMS&T).

The Elementary Course is taken by all physically fit male freshmen and sophomores, citizens of the United States, except students in the Two-Year Course in Agriculture and Veterans of the Armed Forces who served at least one year in those Services. Instruction will be given at Brunswick as well as at Orono.

The Advanced Course is open to male students by selection based on standards prescribed by the War Department and the University. The objective of the program is to produce junior Reserve Officers who have the qualities and attributes essential to their progressive and continued development as officers in the Army of the United States. Information pertaining to admission to the program may be obtained by applying to the Professor of Military Science and Tactics at the Department Office in the Armory.

ELEMENTARY COURSE*

*(General type—applicable to the Army as a whole—Curriculum not specialized)

Freshman Year, Course 1, 2. *Three hours per week, one and one-half credit hours a semester.*

Subject matter: Military Organization; Hygiene and First Aid; Leadership, Drill and Exercise of Command; Individual Weapons and Marksmanship; National Defense Act and ROTC; Maps and Aerial Photographs I.

Sophomore Year, Course 3, 4. *Three hours per week, two credit hours a semester.*

Subject matter: Leadership, Drill, and Exercise of Command; Physical Development Methods; Maps and Aerial Photographs II; Military Administration; Evolution of Warfare; Military Law and Boards.

ADVANCED COURSE—POST WAR

(Infantry, Antiaircraft Artillery, and Signal Corps)

First Year, Course 5, 6. *Five hours per week, one and one-half or two credit hours a semester according to regulations of college concerned.*

Subject matter: Military Leadership, Psychology and Personnel Management; Leadership, Drill, and Exercise of Command; Geographical Foundations of National Power; Military Law and Boards; Tactics and Technique (of the arm or service in which enrolled).

Second Year, Course 7, 8. *Five hours per week, one and one-half or two credit hours a semester according to regulations of college concerned.*

Subject matter: Command and Staff; Military Teaching Methods; Psychological Warfare; Military Problems of the United States; Leadership, Drill and Exercise of Command; Military Mobilization and Demobilization; Combat Intelligence; Tactics and Technique (of the arm or service in which enrolled).

BAND

Course 11, 12. *Three hours a week, minimum of one credit hour a semester* (credits dependent upon class of registration).

The band consists of three classes of students: (1) Regularly enrolled members of the ROTC who register for the band and perform band drill in lieu of Infantry Drill; (2) Non-ROTC students who register for the band; (3) Students who do not register but who usually play with the band on public appearances. Students registered for the band will practice two hours per week and play with the band on public appearances.

Physical Education and Athletics

PROFESSORS WIEMAN, WALLACE, JENKINS, AND LENGYEL; ASSOCIATE PROFESSORS RANKIN AND ROGERS; ASSISTANT PROFESSORS ALLEN AND CASSIDY; MR. CURTIS, MR. KENYON, MR. WOODBURY, MR. SEZAK, AND MISS SHELTON

The development of alert minds, strong wills, and healthy, enduring bodies is the goal of physical education at the University of Maine. As one factor in achieving this goal, participation in athletics and/or other forms of physical exercise by all students is strongly encouraged.

Immediate responsibility for instruction, supervision, and guidance in this area rests with the Department of Physical Education and Athletics, a department comprising three divisions: the Division of Physical Education for Men, the Division of Physical Education for Women, and the Division of Intercollegiate Athletics. The Department of Physical Education and Athletics also participates in a professional training program to prepare qualified students to teach health and physical education, to coach athletic teams, and to direct recreational programs. (See page 196.)

PHYSICAL EDUCATION FOR MEN

Prescribed courses in physical education are required of all non-veteran freshmen and sophomores. These courses are designed to improve body control and strength, to stimulate the development of mental and physical alertness, to establish habits of regular exercise, to teach basic motor skills, and to provide experience in various kinds of recreative sports that may be enjoyed while in college and during later years. The program of activities is planned with due regard to individual differences so that it may be suited to the needs and adjusted to the capabilities of individual students. During the fall and spring, emphasis is placed on outdoor activities, while appropriate indoor activities are stressed during the winter.

A prescribed uniform is required for all physical education classes.

The Intramural Athletic Association, composed of one representative from each participating unit and acting under the supervision of the Division of Physical Education for Men, promotes general participation in athletics. Schedules are arranged in a wide variety of outdoor and indoor sports and each student is given an opportunity to engage in the activities of his choice with others of comparable skill. Teams representing the several dormitories, fraternities, and other housing units compete for championships in their respective leagues. As new interests develop, and when facilities can be made available, new sports are added. The program of intramural athletics is closely co-ordinated with the prescribed courses in physical education and with intercollegiate athletics to the end that "Athletics for All" may be a reality among Maine men.

Pe 1, 2. Physical Education.—These courses or their equivalents are required of all non-veteran freshmen. Outdoor and indoor games, calisthenics, tests, and intramural activities. *Two hours a week, no credit.*

Pe 3, 4. Physical Education.—These courses or their equivalents are required of all non-veteran sophomores. A continuation of courses 1 and 2. *Two hours a week, no credit.*

PHYSICAL EDUCATION FOR WOMEN

Physical Education is required of all freshman and sophomore women. The primary purpose of these courses is to develop, and afford the means of maintaining, good physical condition. Consideration is given to the formation of wholesome personal habits, and opportunity is afforded for participation in various recreative activities with appropriate instruction in the basic skills involved.

A medical examination by the University Physician and a physical examination by the Head of the Women's Division are given each entering student during the first week of college, and thereafter as often as seems advisable. These examinations assist in the proper placement of the student with reference to her college program. They also inform the student as to her physical condition, guide her in planning her mental and physical activity, and provide a basis for early treatment of possible organic or physical defects.

When the medical and physical examinations indicate a need for corrective exercises, individual gymnastics are prescribed. Otherwise, each student receives instruction for one semester in each of the following subjects: Gymnastics, modern dance, individual sports, and team sports, along with postural and general health instruction.

A prescribed uniform is required for all physical education classes.

In addition to the required courses, the Women's Athletic Association, under the guidance of the Division of Physical Education for Women, offers an opportunity for voluntary participation in a broad program of athletics. Schedules are arranged in a variety of outdoor and indoor sports in order that each student may engage in the activities of her choice. Teams representing classes and dormitories compete for championships in their respective groups.

The Women's Athletic Association is governed by a council elected by the students from the several student groups represented.

Pe 1, 2. Physical Education.—Required of all freshmen. Consists of postural and developmental gymnastics, physical efficiency tests and activities selected from the following: hockey, tennis, basketball, softball, gymnastics, modern dance, badminton, archery, and winter sports. *Two hours a week, no credit.*

Pe 3, 4. Physical Education.—Required of all sophomores. A continuation of courses 1 and 2. *Two hours a week, no credit.*

Individual Gymnastics.—Required of freshmen and sophomores for whom corrective work is prescribed by the University Physician. Prescribed exercises for body building or for correction of postural, foot, or other defects. This course is a substitute for Pe 1, 2, 3, or 4, which courses are not required while a student is enrolled in individual gymnastics.

Pe 21. Healthful Living.—Required of all freshman women in the College of Arts and Sciences. A one semester course designed to give a mature and scientific understanding of the principles of health and to create interest in their application to one's self, and one's social relationships. *Two hours a week, two credit hours.*

INTERCOLLEGIATE ATHLETICS

As an integral part of the University's program of physical education, intercollegiate athletics serve the general purposes of that program. In addition, they

constitute an effective means of maintaining interest in all-round physical fitness; they set standards of excellence in physical efficiency; they provide a wholesome and natural common interest around which University loyalties may be rallied and institutional esprit developed; and they afford experience in emotional control and in the capacity to think quickly and act vigorously while under the pressure of strong opposition.

Intercollegiate athletics are governed by an Athletic Board, the membership of which is representative of the University faculty and administration, the Board of Trustees, the alumni, and the undergraduates. Regular schedules are arranged and expert coaches are provided for the following sports: football, basketball, baseball, track, cross country, golf, tennis, and winter sports. Provision is made for Junior Varsity and Freshman teams as well as for Varsity teams in most of these sports. In coaching procedures and in all other particulars, the program is conducted with primary concern for the best interests of the individual participant and his relationship toward the broader objectives of the University.

All students pay an activities fee for the support of University-sponsored activities, including athletics. There is no admission charge for students to University-supported athletic contests conducted on the home grounds.

FACILITIES

The University facilities for athletics and physical education are listed on page 44.

PROFESSIONAL TRAINING IN PHYSICAL EDUCATION

The professional training curriculum in Physical Education is designed to prepare qualified students to teach health and physical education, to coach athletic teams, and to direct recreational programs. It provides for a major in physical education and a minor in another teaching field to be selected by the student.

Academic requirements for admission are stated elsewhere in this bulletin (page 52). Applicants are urged to present at least one unit in a laboratory science (chemistry, physics or biology). Definite evidence of intellectual capacity, positive qualities of character and personality, good health, and reasonable proficiency in motor skills are determining factors in admission. Applicants who lack any of these qualities, which are deemed essential for professional success in physical education, will be advised to enter some other field of study.

Students desiring to pursue the curriculum in physical education will register in the College of Arts and Sciences, freshman and sophomore years, and in the School of Education, junior and senior years. For advice in planning their programs, students will consult with Professor Rankin, Stevens Hall.

The Degree of Bachelor of Science in Education is conferred upon students who successfully complete a total of 125 semester hours (plus 7 hours of military science required by law of all non-veteran freshman and sophomore men) as outlined below.

	Semester Hours	
	MEN	WOMEN
Physical Education Techniques	10	10
Physical Education Methods	8	8
Physical Education Theory	16	18
Education	16	16
Psychology	6	6
English (including Speech)	8	8
Social Studies	12	12
Science	9	9
Second Teaching Field	18	18
Free Electives	22	20
Total	125	125
Military Science (required of non-veteran freshman and sophomore men)	7	

The normal load for a semester is 15-18 hours. A program of study calling for less than 15 hours or more than 18 hours will be permitted only by special arrangement with the Dean.

To qualify in a second teaching field a student should elect courses totaling at least 18 semester hours from the proposed subject matter field.

Students are strongly urged to elect at least one year of Mathematics or of a Foreign Language during the freshman or sophomore years. Additional courses in English and Science and courses in Art are recommended as desirable junior and senior electives.

Fields closely related to Physical Education in which additional courses are recommended are: Psychology, Mental Hygiene, Education, Music.

Various extracurricular activities contribute materially to the professional training of teachers of Physical Education, and students are encouraged to participate, within reasonable limitations, in such activities.

CURRICULUM

First Semester

			Rec.	Lab.	Credit Men	Credit Women
*Pe	11a	Techniques in Rhythmical Activities	0	3	1½	1½
*Pe	11M	Technique in Team Sports	0	3	1½	
*Pe	11W	Technique in Team Sports	0	3		1½
Eh	1	Freshman Composition			3	3
Sh	1	Speech			1	1
Zo	1	Zoology			4	4
Mt	1	Military Training			1½	
†Pe	21	Healthful Living				2
		Elective			4	4
					16½	17

* When Pe course numbers are followed by letters, they have the following significance: a—Men and Women; M—Men; W—Women.

† Formerly Pe 19.

Second Semester

			Rec.	Lab.	Credit Men	Credit Women
*Pe	12a	Technique in Play and Game Activities	0	3	1½	1½
*Pe	12M	Technique in Team Sports	0	3	1½	
*Pe	12W	Technique in Team Sports	0	3		1½
Eh	2	Freshman Composition			3	3
Sh	2	Speech			1	1
Zo	12a	Anatomy and Physiology			5	5
Mt	2	Military Training			1½	
		Elective			4	4
					17½	16

Third Semester

*Pe	13M	Technique in Gymnastics	0	4	2	
*Pe	13W	Technique in Gymnastics	0	4		2
Py	1	Psychology			3	3
Sy	1	Sociology			3	3
		Modern Society or History			3	3
Mt	3	Military Training			2	
		Elective			4	4
					17	15

Fourth Semester

*Pe	14M	Technique in Apparatus and Tumbling	0	4	2	
*Pe	14W	Technique in Modern Dance	0	4		2
Py	2	Psychology			3	3
Sy	2	Sociology			3	3
		Modern Society or History			3	3
Pe	24	First Aid				2
Mt	3	Military Training			2	
		Elective			4	4
					17	17

Fifth Semester

*Pe	61M	Methods in Sports Activities	2	0	2	
*Pe	61W	Methods in Sports Activities	2	0		2
Pe	71	Principles in Physical Education	2	0	2	2
Pe	73	Athletic Training	1	2	2	
Ed	35	Foundations in Education			4	4
		Elective			6	7
					16	15

Sixth Semester

*Pe	62M	Methods in Sports Activities	2	0	2	
*Pe	62W	Methods in Sports Activities	2	0		2
Pe	72	Tests and Measurements in Physical Education	3	0	3	3
Pe	74	Organization and Administration of Recreational Activities	2	0	2	2
Ed	36	Foundations in Education			4	4
		Elective			5	4
					16	15

* When Pe course numbers are followed by letters, they have the following significance: a—Men and Women; M—Men; W—Women.

Seventh Semester

			Rec.	Lab.	Credit Men	Credit Women
*Pe	63M	Coaching Football and Basketball	2	0	2	
*Pe	63W	Methods in Modern Dance	2	0		2
Pe	77	Organization and Administration of Physical Education and Athletics	2	0	2	2
Ed	45	The Curriculum and Teaching			4	4
		Elective			8	7
					16	15

Eighth Semester

*Pe	64M	Coaching Track and Baseball	2	0	2	
*Pe	64W	Methods in Gymnastics	2	0		2
Pe	76	Preventive and Remedial Gym	3	0	3	3
Pe	78	Health Education	2	0	2	2
Ed	46	The Curriculum and Teaching			4	4
		Elective			5	4
					16	15

* When Pe course numbers are followed by letters, they have the following significance: a—Men and Women; M—Men; W—Women.

COURSE DESCRIPTIONS

Pe 11, 12, 13, and 14.—These are courses designed to develop skill in the various activities in which the physical education instructor must be proficient. These courses give a total of ten credit hours through the freshman and sophomore years. MR. RANKIN, MR. WALLACE, MISS LENGYEL, AND STAFF

Pe 61-62M. Methods in Sports Activities (Men).—This course covers many of the so-called minor sports which may be adapted to a well rounded intramural program. Stress is placed on rules, fundamental skills, and practical coaching. *Two hours, two credit hours each semester.* MR. WOODBURY

Pe 61-62W. Methods in Sports Activities (Women).—Instruction in organized team games, such as basketball, hockey, tennis, archery; recreational activities, such as volley ball, badminton, deck tennis. Plan and diagram of plays, skeleton practice system, and methods of training. *Two hours and field work, two credit hours each semester.* MISS ROGERS

Pe 63M. Coaching Football and Basketball (Men).—Practical instruction in football and basketball for men preparing to enter the coaching profession. *Two hours, two credit hours.* MR. ALLEN AND OTHERS

Pe 63W. Methods in Modern Dance (Women).—Designed for students preparing to teach Modern Dance. Stresses the teaching of techniques in Rhythmical Activities and Dance Composition. Open to Physical Education Majors, others by special permission only. *Three hours, two credit hours.* MISS CASSIDY

Pe 64M. Coaching Track and Baseball (Men).—The first half of the semester is devoted to a study of the mechanics of running, jumping, and weight throwing, with discussion of different styles involved in each, and with practice in criticizing the faults of candidates in all events. The second half of the semester is devoted to a study of approved methods in coaching baseball, in all its phases. *Two hours, two credit hours.* MR. JENKINS AND MR. KENYON

Pe 64W. Methods in Gymnastics (Women).—A course in practical methods and actual teaching of formal gymnastics. *Two hours, two credit hours.*
MISS ROGERS

Pe 71. Principles in Physical Education.—An introductory course in the interpretation and objectives of physical education. Open to juniors who are preparing to teach Physical Education. *Two hours and field work, two credit hours.*
MISS LENGYEL

Pe 72. Tests and Measurements in Physical Education.—A practical course in the use of objective measurements, and statistical methods in physical education and athletics. *Three hours, three credit hours.* MR. RANKIN

Pe 73. Athletic Training.—Methods necessary to the conditioning of athletes, care of injuries and injury prevention. Diagnosis, prescription, diet, massage, taping, first aid, etc. *Recitation, one hour, laboratory, two hours, two credit hours.*
MR. WALLACE

Pe 74. Organization and Administration of Recreational Activities.—Designed to acquaint students with the need, nature, and extent of recreational programs. Special consideration is given to the contribution of physical education to community recreation in the phases needed by playground workers, summer camp counselors, 4-H Club leaders, and teachers of Physical Education in organizing and administering recreative programs. *Two hours, two credit hours.* MISS LENGYEL

Pe 76. Preventive and Remedial Gymnastics.—The study of body mechanics, corrective exercises, and massage. *Three hours, three credit hours.*
MISS LENGYEL

Pe 77. Organization and Administration of Physical Education and Athletics.—Administrative policies and procedures, legal aspects of physical education and athletics, budgets, evaluation and coordination of the several phases of physical education and athletics, program planning, staff organization, equipment and facilities, locker room administration, game management, athletic associations, public relations, etc. *Two hours, two credit hours.* MR. RANKIN

Pe 78. Health Education.—The various methods in conducting health programs and influencing positive health of students in elementary and intermediate grades. *Two hours, two credit hours.* MISS LENGYEL

Graduate Study

FACULTY OF GRADUATE STUDY

EDWARD N. BRUSH, Dean of Graduate Study and Professor of Psychology
JOHN R. CRAWFORD, Secretary of the Faculty of Graduate Study and Professor of Education
PAUL CLOKE, Dean of the College of Technology and Director of the Technology Experiment Station
ARTHUR L. DEERING, Dean of the College of Agriculture and Director of Agricultural Extension Service
FRED GRIFFEE, Director of the Maine Agricultural Experiment Station
LOUIS T. IBBOTSON, Librarian
JOSEPH M. MURRAY, Dean of the College of Arts and Sciences
MARK R. SHIBLES, Dean of the School of Education and Director of the Summer Session

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ROBERT I. ASHMAN, Professor and Head, Department of Forestry
CLARENCE E. BENNETT, Professor and Head, Department of Physics
WALTER J. CREAMER, Professor and Head, Department of Electrical Engineering
HOWARD DICKEY, Professor and Head, Department of Animal Industry and Animal Husbandman
IRWIN B. DOUGLASS, Professor and Head, Department of Chemistry
EDWARD F. DOW, Professor of Government and Head, Department of History and Government
WESTON S. EVANS, Professor and Head, Department of Civil Engineering
H. LLOYD FLEWELLING, Professor of English
DONALD FOLSOM, Plant Pathologist, Agricultural Experiment Station
FRANK FOSTER, Professor of Education
A. DOUGLASS GLANVILLE, Associate Professor and Acting Head, Department of Psychology
HAMILTON GRAY, Professor of Civil Engineering
PEARL S. GREENE, Professor and Head, Department of Home Economics
JOSEPH I. HALL, Assistant Professor of Education
HENRY C. HAWLEY, Professor of Business Administration
ARTHUR S. HILL, Professor of Electrical Engineering
E. REEVE HITCHNER, Professor of Bacteriology and Head, Department of Bacteriology and Biochemistry
ERNEST JACKMAN, Professor of Education
LYLE C. JENNESS, Professor of Chemical Engineering and Acting Head, Department of Chemical Engineering and Department of Industrial Cooperation
SPOFFORD H. KIMBALL, Professor of Mathematics and Head, Department of Mathematics and Astronomy
HIMY B. KIRSHEN, Professor of Economics and Head, Department of Economics and Sociology
RONALD B. LEVINSON, Professor and Head, Department of Philosophy

WINTHROP C. LIBBY, Professor of Agronomy and Head, Department of Agronomy and Agricultural Engineering
HOWARD MENDALL, Assistant Professor of Game Management
CHARLES H. MERCHANT, Professor and Head, Department of Agricultural Economics and Farm Management
HOWARD L. RUNION, Professor and Head, Department of Speech
PAYSON SMITH, Professor of Education
J. ROBERT SMYTH, Professor of Poultry Husbandry
BENJAMAN R. SPEICHER, Professor and Head, Department of Zoology
WILMARTH H. STARR, Professor of Romance Languages and Head, Department of Modern Languages and Classics
LOUISE A. STEDMAN, Associate Professor of Home Economics
FERDINAND H. STEINMETZ, Professor of Botany and Head, Department of Botany and Entomology
ALBERT M. TURNER, Professor of English and Comparative Literature and Head, Department of English
JAMES H. WARING, Professor and Head, Department of Horticulture
HARRY D. WATSON, Professor and Head, Department of Mechanical Engineering
THEODORE WEILER, Assistant Professor of Sociology

GENERAL INFORMATION

Administration.—Graduate work is administered by the Faculty and Dean of Graduate Study. The details of administration are in the hands of an executive committee consisting of the Dean, two members each from the College of Arts and Sciences and Technology, two from the College of Agriculture and the Agricultural Experiment Station, and two from the School of Education.

Admission.—Students who hold a bachelor's degree from the University of Maine, or from an institution granting a fully equivalent degree, and who desire to pursue advanced studies, are admitted as graduate students and are under the direction of the Faculty of Graduate Study, whether they are candidates for a degree or not.

Registration.—At the beginning of each semester all graduate students, whether candidates for a degree or not, are required to register with the head of the department in which they propose to do their major work, obtain the approval of the Dean, and complete their registration by filing their program of study at the Registrar's office. A fee of two dollars is charged for registration after two weeks have elapsed.

Tuition and Fees.—The tuition charges for graduate students are the same as for undergraduates.

Graduate students receiving a degree are required to pay a diploma fee of $5.00.

Candidates for professional degrees are required to pay a fee of $5.00 at the time of registration, and a fee of $10.00 upon the presentation of the thesis.

Degrees.—The degrees of Master of Arts, Master of Science, and Master of Education are granted to candidates who hold suitable bachelor's degrees and fulfill the requirement of residence and scholarship.

A candidate for an advanced degree must give evidence by his previous record that he is qualified to do graduate work of a satisfactory grade. If he is a graduate of another institution he is required to submit, with his plan of study, credentials

covering the courses pursued and the standing attained. If he is a graduate of the University of Maine he must present his record from the Registrar's office.

University of Maine Studies.—The *University of Maine Studies,* Second Series, issued under the direction of the Faculty of Graduate Study, are described under the heading of University Publications. Copies and lists of subjects may be obtained through the University Library.

FELLOWSHIPS AND SCHOLARSHIPS

Applications for graduate scholarships should be made to the Dean of Graduate Study by April 10.

Trustee Graduate Scholarships.—Eight scholarships, of the value of a year's tuition, have been established by the Board of Trustees. Two are assigned to each teaching division of the University, or at large in any year when there are no suitable candidates for study in a particular college.

Maritime Provinces Graduate Scholarships.—By action of the Trustees of the University, a graduate scholarship is available annually in each of the four academic divisions of the University, on a competitive basis, for graduates of the colleges and universities in the Provinces of New Brunswick, Nova Scotia, and Prince Edward's Island. These scholarships have a value of $300, equivalent to a full year's tuition for a student residing without the State.

Assistantships and Fellowships.—Graduate assistantships are available in a number of departments. A listing of those currently holding such appointments will be found on pages 25-27.

Industrial Research Fellowships provide an opportunity to combine research for the Department of Industrial Cooperation with graduate study. Part-time research in the Maine Agricultural Experiment Station is sometimes combined with a program of graduate work.

Graduate assistants and fellows normally devote half-time to teaching or research and therefore require two years to complete the requirements for the master's degree.

Applications for appointments to graduate assistantships and fellowships should be made directly to the head of the department concerned.

REQUIREMENTS FOR THE MASTER'S DEGREE

General Requirements.—A candidate for the master's degree is required to devote at least one year (two semesters) to resident graduate study and to complete work amounting to fifteen hours per week throughout this period. In the case of summer session students, four sessions, or the equivalent, are normally accepted as fulfilling residence requirements, except that for candidates for the degree of Master of Education the requirement is five summers.

The amount of credit which may be transferred from another university is limited to six semester hours; credit may be allowed for Extension classes, under certain conditions, up to a third of the total requirements. No credit is allowed for work done by correspondence. All requirements for the degree must be completed within an eight-year period.

More detailed statements concerning the requirements in particular fields are given in the sections on the various departments. Some departments have a foreign language requirement.

Program of Studies.—As soon after registration as practicable, the student, in conference with his major instructor, will plan his entire course of study for the master's degree, but may postpone until later the selection of a thesis subject.

The curriculum shall include work in a major department or subject in which the candidate has already completed the equivalent of at least two years of undergraduate study. The work may all be done in one department, or it may include not more than two minor subjects which bear a distinct relation to the general plan or purpose of the major subject. All of the work must be of advanced character and must be tested by examinations which the candidates shall pass with distinction.

Courses of study intended primarily for graduate work are numbered above 100 in the catalog, but courses numbered 51 to 100 inclusive may be counted upon approval. Courses numbered 50 or under may not be accepted for graduate credit.

A thesis is required of all candidates for the degrees of Master of Arts and Master of Science; a paper, for which two semester hours of credit are allowed, is a requirement for the degree of Master of Education.

Theses.—For students carrying full registration during the regular sessions, the thesis subject shall be submitted and approved by the end of the first semester. *The student is not formally admitted as a candidate for the master's degree until the thesis subject has been approved.* As the thesis forms a part of the thirty hours required for the above degree, the student must register for it once, as for any course.

Detailed requirements for the form and arrangement of theses are found in a pamphlet with the title "Information Concerning the Preparation of Graduate Theses," which may be obtained at the office of the Dean of Graduate Study. Students should ask for this publication before beginning a thesis or paper.

Degree of Master of Education.—The degree of Master of Education is intended for persons with teaching or administrative experience who desire to improve their professional efficiency but who have no intention of doing extended research or of pursuing graduate work beyond the master's degree. Students are not eligible to receive this degree until they have had at least three years of teaching or administrative experience.

The program for this degree, totalling thirty hours of credit, shall contain at least two graduate seminar courses amounting to four credits to be taken during the last three summers of work, and a paper for which two credits are given.

Examinations and Awarding of Degrees.—Near the end of the course of study for the master's degree, and after the thesis or paper has been approved, the candidate will be required to pass an oral examination covering the work done, including the thesis or paper. On request of the major instructor, the time for such examination will be arranged by the Dean of Graduate Study to accord so far as possible with the convenience of all concerned.

Graduates are required to receive their degree in person at Commencement unless especially excused by the President. Students completing their requirements in the summer, however, may have their degrees awarded in October.

PROFESSIONAL DEGREES

The professional degrees of Chemical Engineer (Ch.E.), Civil Engineer (C.E.), Electrical Engineer (E.E.), and Mechanical Engineer (M.E.) may be conferred upon graduates in the curricula of Chemistry, Chemical Engineering, or Pulp and Paper Technology, Civil Engineering, Electrical Engineering, and Me-

chanical Engineering, respectively, upon the completion of the requirements stated below. Graduates receiving the degree of Bachelor of Science in General Engineering are eligible to receive, upon the completion of the requirements listed below, the professional degree of Chemical Engineer, Civil Engineer, Electrical Engineer, or Mechanical Engineer, depending upon the field of work of the candidate and the judgment of the dean and the heads of departments in the College of Technology. The degree of Forest Engineer (F.E.) has likewise been authorized to recognize professional advancement in Forestry.

The presentation of a satisfactory thesis, which shall constitute an original contribution to the advance of engineering, is required of all candidates. The candidate must hold a position of responsibility and must have accomplished professional work of eminence for a period of at least five years subsequent to graduation. A full and complete statement covering the professional experience of the candidate must be presented at the time of registration. Candidates are expected to be present in person to receive their degrees.

The Brunswick Campus

Early in the spring of 1946, when it became apparent that the University of Maine and the colleges in this state would be unable to expand their facilities sufficiently to enroll many qualified veterans and recent high school graduates in the fall, Governor Horace Hildreth appointed a committee to study the problem. This committee, representing the State Department of Education, the Normal Schools, the Maine colleges, the Veterans' Administration, and the University of Maine, recommended the establishment of "an extension of the State University." With the cooperation and financial assistance provided by the Governor and Council and the State Legislature, the Trustees voted to accept this assignment and entered into an agreement with the U. S. Navy for the use of certain facilities at the Naval Air Station at Brunswick.

Location.—The Brunswick Campus of the University of Maine is located on U. S. Route 1, about three miles from Brunswick and five miles from Bath.

Admission.—Entrance requirements for The Brunswick Campus are the same as for Orono. (See Page 52.) Scholarship standards, the marking system, and all general rules and regulations are the same as those maintained at Orono.

Student Expenses.—See section on financial information elsewhere in this catalog.

Officers of Administration and Faculty.—See pages 27-30.

FACILITIES

Living Accommodations.—Students are housed in four buildings formerly occupied by junior officers, enlisted men, and Waves. Meals are served in the cafeteria building formerly used by the navy for the same purpose.

Other Facilities.—The University of Maine has the use of about 35 buildings at the former Naval Air Station. The 850 students who attend classes here have spacious grounds, an athletic field, and a gymnasium which is also available for concerts and dramatics. There are bowling alleys, pool and ping-pong tables, reading and lounging rooms, and courts for tennis, volleyball, and badminton.

Other facilities include a chapel, library, campus store, barber shop and a well-equipped photo laboratory.

The former officers' club is used for a recreation building.

The University of Maine uses the former administration building for its main offices. Classes are held in buildings which have been remodeled to provide lecture halls, classrooms, and laboratories.

PROGRAM OF INSTRUCTION

General courses are provided for freshmen who seek degrees in Arts and Sciences, Agriculture, and Technology. These courses parallel those given at Orono. Through the College of Arts and Sciences at Brunswick and Orono pre-professional courses are available to meet requirements to enter such professional schools as medicine, law, dentistry, and teacher training.

The curricula for 1947-48 are as follows:

Fall Semester

Agriculture

Agr	1	Orientation	½ hour
Ag	11	Agronomy	3 hours
Bt	1	Botany	4
Ch	1	Chemistry	4
Eh	1	English Comp.	3
Ph	2	Poultry Hus.	3
			17½ hours

Forestry

Ch	1	Chemistry	4 hours
Eh	1	English Comp.	3
Fy	1	Elements of Forestry	2
Md	1	Eng. Drafting	2
Ms	9	Trigonometry	2
Zo	1	Zoology	4
			17 hours

Arts and Sciences

Eh	1	English Comp.	3 hours
		Social Science	3
		Natural Science	4
		Language	4
Sh	1	Public Speaking	2
			16 hours

Technology

Ch	1	Chemistry	4 hours
Eh	1	English Comp.	3
Md	1	Eng. Drafting	2
Ms	1	Trigonometry	2
Ms	3	College Algebra	2
Ps	1	Physics	5
			18 hours

Spring Semester

Agriculture

Agr	2	Orientation	½ hour
An	3	Gen. Animal Husbandry	3 hours
Fy	1	Elements of Forestry	2
Ht	2	Horticulture	3
Eh	2	Freshman Comp.	3
Ch	2	Gen. Chemistry	4
Zo	2	Zoology	4
			19½ hours

Forestry

Bt	2	Botany	4 hours
Ch	2	Gen. Chemistry	4
Eh	2	Freshman Comp.	3
Fy	2	Elements of Forestry	2
Md	12	Forestry Drafting	2
Ms	10	Trigonometry	2
			17 hours

Arts and Sciences

Eh	2	English Comp.	3 hours
		Social Science	3
		Natural Science	4
		Language	4
Sh	2	Public Speaking or Elective	2
			16 hours

Technology

Ch	2	Gen. Chemistry	4 hours
Eh	2	Freshman Comp.	3
Md	2	Ely. Mach. Drafting	2
Ms	4	Anal. Geometry	4
Ps	2	Gen. Physics	5
Gc	6	Orientation	½ hour
			18½ hours

STUDENT ACTIVITIES

THE STUDENT SENATE is composed of representatives of the residence halls and the off campus groups. It serves to reflect student opinions, make recommendations to the Administration and assist in the general integration of student activities.

THE MAINE MASQUE.—This organization presents two or three plays a year and affords an opportunity for those who are interested in acting, production, direction, stage design, set planning and stage lighting. Successful participation results in membership in the Maine Masque, a membership transferable to the Orono campus.

THE MAINE ANNEX is the weekly campus newspaper published by the students.

THE PRISM is an illustrated annual published by the junior class. The Brunswick Campus material is collected and prepared by members of the Brunswick campus selected by the junior class.

THE PHOTOGRAPHY CLUB is what the name implies and is fortunate to have a well-equipped photo laboratory. Its members produce many of the pictures used in the Maine Annex, the Prism, and other publications.

THE RADIO CLUB has the use of much modern equipment and operates an amateur station on campus.

THE GLEE CLUB is an active musical organization the members of which receive scholastic credit.

THE MAINE OUTING CLUB is open to all students who are interested in getting out of doors for informal hiking, mountain climbing, skiing, clam bakes, and overnight trips.

ATHLETICS.—There is a comprehensive program of intramural sports including bowling, basketball, volley ball, tennis and softball, and a schedule of games in the major sports is carried on with other schools.

CALENDAR—BRUNSWICK CAMPUS

Fall 1947

Registration	Tuesday, 8:00 A.M.-4:30 P.M.	Sept. 30
	Wednesday, 8:00 A.M.-4:30 P.M.	Oct. 1
Orientation	Thursday, 8:00 A.M.-5:00 P.M.	Oct. 2
	Friday, 8:00 A.M.-5:00 P.M	Oct. 3
	Saturday, 8:00 A.M.-12 Noon	Oct. 4
Classes begin	Monday, 8:00 A.M.	Oct. 6
Freshman reports due	Friday, 5:00 P.M.	Nov. 7
Thanksgiving recess begins	Wednesday, 11:50 A.M.	Nov. 26
Instruction resumed	Monday, 8:00 A.M.	Dec. 1
Midsemester reports due (covering the first half semester to Dec. 5)	Tuesday, before 5:00 P.M.	Dec. 9
Christmas recess begins	Saturday, 11:50 A.M.	Dec. 20
Christmas recess		
Instruction resumed	Tuesday, 8:00 A.M.	Jan. 6
Classes end	Saturday, 11:50 A.M.	Jan. 31
Final examinations begin	Monday	Feb. 2
Examinations end. Semester ends	Saturday	Feb. 7
Registration	Wednesday and Thursday	Feb. 11, 12

Spring 1948

Classes begin	Friday, 8:00 A.M.	Feb. 13
Washington's Birthday, a holiday	Monday	Feb. 23
Spring recess begins	Friday, 11:50 A.M.	Apr. 2
Spring recess		
Instruction resumed	Tuesday, 8:00 A.M.	Apr. 13
Midsemester reports due (covering the first 8 weeks to Friday, April 16)	Tuesday, before 5:00 P.M.	Apr. 20
Classes end	Saturday	June 5
Final examinations begin	Monday, 8:00 A.M.	June 7
Examinations end	Saturday	June 12

Summer Session

The University offers a Summer Session extending over a period of six weeks. Professional courses in elementary and secondary education, along with academic subjects, are offered. Workshops in both elementary and secondary education are conducted for a period of three weeks. In addition to the Workshops, some courses are organized for three weeks thereby enabling the student who enrolls for a Workshop to complete a full Summer Session schedule. Several Short Work Periods on special educational problems, usually lasting for a week, are available for students who are interested in them.

As an integral part of the University organization, the Summer Session has similar standards of academic achievement. The faculty consists of members of the University staff and numerous visiting professors from other institutions.

The Session is primarily for the benefit of teachers and superintendents who desire to take professional courses in the field of Education or to pursue other subjects which may be helpful to them in connection with their work. Hence, special attention is given to teachers' courses in the various subjects offered.

The Session also affords opportunities for students in the University of Maine or other similar institutions to secure credits toward a degree. Normal-school graduates who are admitted to advanced standing as candidates for a bachelor's degree in the School of Education may do a considerable part of their work in the Summer Session.

The facilities of the Summer Session are open to both men and women, and students are admitted without examinations. The requirements for admission are, in general, the same as those for the other sessions of the University. Students are expected to have completed as a minimum preparation a standard high-school course or its equivalent.

Transcripts for work previously done are necessary only when the student plans to become a candidate for a degree at the University of Maine. New students who expect to become candidates for a master's degree should send in advance a transcript of record to the Dean of Graduate Study.

Classes meet five times a week, Monday to Friday inclusive. The normal registration for the six-week session is for three courses, the successful completion of which entitles the student to six semester hours of credit.

Registration for the Summer Session will be held on June 28 and the Session will terminate August 6, 1948. The Bulletin, describing courses offered during this period, will be issued about March 25. For further information concerning the program address Mark R. Shibles, Director of the Summer Session, Orono, Maine.

Extension Courses

The University offers a limited amount of work each year through extension courses given by various departments. These courses are handled in the General Extension Office as a part of the program of the School of Education. Courses are offered by departments in all the colleges of the University according to the demand for such work. A printed list of these offerings is available upon request.

Three general types of courses are offered as follows: (1) Correspondence courses, which are handled entirely by mail on an individual basis; (2) extension classes, which may be organized in any community where sufficient demand exists, provided an instructor is available for the course desired; (3) Saturday class extension courses which are offered on the campus on Saturday mornings.

College credit toward a degree may be earned by all types of extension courses, subject to the regulations of the department and college in which the student is registered, the approval of which should always be obtained in advance if such credit is desired.

Persons interested in additional information on Extension courses, on either a credit or non-credit basis, should write to the Director of General Extension Division, School of Education, Orono, Maine.

Financial Information

STUDENT EXPENSES

The student expenses outlined in the following paragraphs are the anticipated charges for the academic year 1948-49. Changing costs may require an adjustment of these charges.

Tuition.—The tuition charge is $112.50 per semester for residents of Maine and $175.00 per semester for non-residents. Tuition for the Two-Year Course in Agriculture is $67.50 per semester for residents of Maine and $100.00 per semester for non-residents.

Estimate of Student Expenses.—A partial list of necessary expenses for a semester is indicated below. It includes only items which are fairly uniform for all students.

Tuition (Residents of Maine)	$112.50*
Board and Room (University Dormitories)	252.00
Health Service Fee	5.50
Student Activities Fee	9.50
	$379.50

* For non-residents of Maine, add $62.50.

Textbooks, personal laboratory equipment, etc., are not furnished by the University and may be estimated to cost from $32.50 to $62.50 per semester. For technology students, see a more detailed statement under the College of Technology.

Payment of Bills.—All University bills including those for board and room in University buildings are payable in advance on the registration day for each semester. In *exceptional circumstances,* the student may make arrangements acceptable to the Treasurer for a series of payments during the semester.

The following table shows the fixed charges by semesters for freshmen.

	Due on semester Registration Day
Tuition*	$112.50
Room and Board (University Dormitories)†	252.00
Military Deposit‡ (Men only)	20.00
Student Activities Fee	9.50
Health Service Fee	5.50
Freshman Orientation Period	7.00
	$406.50

* For non-residents of Maine, add $62.50.
† See statement under Room and Board.
‡ See "Deposits."

For students who do not room and board in University dormitories, these amounts are reduced by $252.00.

For students in the Two-Year Course in Agriculture, the semester deposit required is $67.50 for tuition and $5.50 for the Health Service Fee. For non-

residents, the semester deposit required is $100.00 for tuition and $5.50 for the Health Service Fee.

For students classified as "special" § and taking less than a normal program, the rate of tuition will be $8.00 ($12.00 for non-residents) per semester hour up to and including nine semester hours. Full tuition will be charged for more than nine semester hours.

Fees.—A Health Service Fee of $5.50 per semester is charged all students.

A Student Activities Fee of $9.50 per semester is charged all students except those in the Two-Year Course in Agriculture and those taking less than ten credit hours.

A fee of $2.00 is charged a student who registers after the prescribed day of registration.

A towel fee of $1.50 per semester is charged all students registered for Physical Education.

A fee of $1.00 will be charged each male student for a lock for his gymnasium locker.

The prescribed gymnasium uniform for women costs approximately $20.00. Information regarding the uniform and where it may be purchased will be sent with admission cards.

All students receiving a degree are required to pay a graduation fee of $5.00.

The fee for Summer Forestry Camp (Princeton, Maine), described on page 89, is $80.00 for residents of Maine and $120.00 for non-residents. This is for instruction only. Living costs are additional to above fees and are based on prevailing price conditions.

The fees for students registered in Applied Courses in Music are indicated on page 138.

The fee for Civil Engineering Summer Surveying, described on page 173, is $50.00 for residents of Maine and $75.00 for non-residents. This fee includes instruction and transportation to more distant locations when work is required at points other than in the vicinity of the Orono-Old Town-Bangor area. Living costs are additional to above fees and are based on prevailing price conditions.

Room and Board.—Due to the difficulty of estimating the cost of food, fuel, and services, it is impossible to guarantee the exact cost of room and board. The charge for room and board for the spring semester, 1948, is $252.00.

In the cooperative dormitory for women, the charge for room and board is based upon student effort in management and operation, and is at less than regular rates.

The charge for rooms in the Temporary Housing Units—North Dormitories, East Hall and West Hall—is $13.00 per semester less than in the other University dormitories.

The charge for room and board in the Brunswick Campus dormitories is $240.00 per semester.

All students rooming and boarding in a University dormitory during the Freshman Orientation Period will be charged $7.00.

All University dormitories are closed to students during scheduled recess periods.

Deposits.—An application deposit of $15.00 is required at the time of applica-

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§ See page 53.

tion and will be applied toward payment of the first semester's tuition. This deposit is refunded if the applicant is not admitted or withdraws prior to September 1.

A room (or other rental) reservation deposit of $25.00 is required when application is made for University housing and will be applied toward the payment of housing charges. The deposit will be refunded if a student withdraws on or before August 1. If notice of withdrawal is given on or before September 1, $10.00 will be refunded. The entire deposit is forfeited in case of withdrawal after September 1.

All men taking military training are required to make a deposit of $20.00 to cover cost of equipment. This deposit is returned at the end of the year, less charges for textbooks, shoes, and other uniform accessories, and lost or misused equipment.

Deposits are required of students who take chemistry or botany. The deposit for chemistry is $3.00 and for botany $2.00. Any part of the deposit not needed to cover cost of supplies and breakage is returned to the student at the end of the course.

Refunds.—Students who leave the University for any reason before a semester is completed will have refunded to them prepaid tuition as follows:

80% during the first two weeks
60% during the third week
40% during the fourth week
20% during the fifth week
No refunds of tuition after the fifth week.

Activities and Health Fees—No refunds.

Unused board will be refunded on the basis of the number of full weeks remaining in the semester. The rate will be determined by dividing the semester charge by the number of full weeks in the semester.

Room charges will be refunded as follows:

60% during the first four weeks
30% during the fifth through the eighth week
No refunds after the eighth week.

No special fees will be refunded.

Student Employment.—Students who need to earn part of their expenses should give consideration to such important factors as health and scholastic aptitude. The Placement Director gives every possible assistance to students seeking employment. Entering freshmen desiring employment should write to the Director of Admissions for an application blank. A cooperative dormitory is available for a limited number of women.

Communications.—Communications with reference to financial affairs of students should be addressed to the Treasurer of the University of Maine.

LOAN FUNDS

Application for loans should first be made to the Dean of Women by women students and to the Dean of Men by men students. Where requirements make necessary a different handling of loans, either of these officials will refer the request to the proper person.

The American Agriculturist Foundation Loan Fund, now amounting to $516,

was established to enable deserving junior and senior students in Agriculture and Home Economics to complete their education. The fund is administered by a loan committee, of which the Dean of the College of Agriculture is chairman.

The American Institute of Electrical Engineers Loan Fund, now amounting to $298, was established by the University of Maine Branch in 1918 for the purpose of assisting needy students majoring in electrical engineering.

The Androscoggin Valley Alumni Loan Fund, now amounting to $1,034, is available to students from Androscoggin County. Loans are not to exceed $75 and are granted by the University Committee on Loans.

The Bangor Business and Professional Women's Loan Fund, now amounting to $1,437, was established for needy and deserving women students, preferably from Bangor and vicinity, who have been in attendance at least two years and who have maintained an average grade of "C" or better. Loans shall not exceed $250 per student.

The Boston Alumnae Fund, now amounting to $1,004, is available for women of high scholastic standing who have completed at least two years of college work. Loans shall in no case exceed $200.

The Carleton Orchard Fund, now amounting to $1,067, originated in the gift to the State of Maine by James A. Gregory of one interest-bearing first mortgage bond for $1,000, the interest on which was to be used for the promotion of scientific orcharding in Maine. At first administered by the Maine Department of Agriculture, the income from this bond was transferred in 1925 to the College of Agriculture of the University "for the assistance of needy students who shall be residents of the State of Maine, majoring in horticulture at the said college of agriculture."

The Class of 1914 Loan Fund, now amounting to $1,120, is available for loans to needy upperclass students.

The Class of 1926 Loan Fund for Seniors, now amounting to $1,223, is loaned to seniors of good scholastic standing during the last semester of their senior year. Amount loaned is $50 per person, exceptional cases to be allowed $100.

The Delta Chi Alpha Loan Fund, now amounting to $823, is loaned to male members of the senior class whose average college grade has been "C" or better. Individual loans are limited to $50.

The Drummond Fund of $975 was established in memory of Frank Hayden Drummond, of Bangor, by his widow and children. It is loaned to needy students of good character who have attained an average of "C" or better.

The Esther Eayres Chapter, Daughters of American Revolution Loan Fund, now amounting to $267, is a gift of the Orono Chapter of the D.A.R. and is to be loaned to women students who are juniors or seniors.

The General Loan Fund, now amounting to $4,750, was donated by friends, students, and faculty of the University. The first donation was made in May, 1930, and has been increased at various periods since that time.

The Kappa Psi Loan Fund, now amounting to $298, was donated in the spring of 1933, to be used for the benefit of women students.

The Kittredge Fund, now amounting to $2,680, was established by Nehemiah Kittredge, of Bangor. It is in the control of the President and the Treasurer of the University, by whom it is loaned to needy students in the three upper classes. Individual loans are limited to $50.

The Maine Alumni Association of Boston Loan Fund, now amounting to $642, was established in 1940 and aims to be helpful particularly to male students

whose homes are in Massachusetts, though any male student at the University is eligible for a loan. Loans are made on the basis of need, character, scholastic standing, personality, and leadership in extracurricular activities.

The Maine Alumni Teachers Association Loan Fund was established in 1945 by a contribution of $1,014 from the Maine Alumni Teachers Association. Loans are made to students in any department of the University who from the nature of their courses are training to become teachers. Satisfactory academic record, good character, and conduct shall be the basis for making the loans. While this fund is intended primarily for seniors, it may be used to assist juniors. Loans are made by and through the usual methods in use at the University.

The Maine Campus Fund, now amounting to $579, is loaned to juniors and seniors whose conduct and scholarship are satisfactory, preference being given to those interested in the literary activities of the University. Amount loaned is limited to $50 per person. Loans must have the endorsement of a satisfactory second party.

The Charles H. Payson Loan Fund, now amounting to $7,088, was given by the late Mrs. Charles H. Payson, of Portland, Maine, in memory of her husband. It is to be loaned to needy students under such conditions as may be established by the University administration.

The Mary S. Snow Memorial Fund, now amounting to $5,214, was established by students and friends of Mary S. Snow, one-time superintendent of schools in Bangor, and later a leader in home economics education, as a tribute to her memory. It is to be used in helping earnest and deserving young women secure a home economics education at the University of Maine. From $1,000 of this fund, loans may be granted to home economics students of such character and scholarship as give promise that the education thus made possible will be of genuine value to the students and to society. The remainder of the fund is reserved to build up endowment for a future scholarship.

The Bertha Joy Thompson Loan Fund of $10,000 was bequeathed, in trust, to the University of Maine by the late Mrs. Bertha Joy Thompson, of Ellsworth, Maine. The net income from the fund is to be loaned to worthy, deserving, and needy students of the University of Maine under such terms and conditions as the Board of Trustees may determine.

The Women's Loan Fund, now amounting to $3,663, was established by the American Association of University Women, University of Maine Branch, in 1925. It provides for loans to undergraduate women of the University who have successfully completed one or more years of university work, and have been found by the University to be thoroughly satisfactory in regard to character, scholarship, and general ability, and to be in genuine need. Loans to one student shall not exceed $200 a year.

SCHOLARSHIPS

Forms for making application for scholarships may be obtained at the offices of the Deans of the various colleges and should be returned to the office of the Director of Admissions before January 5. Candidates may, if they wish, apply for particular scholarships. No student whose record is unsatisfactory will be considered eligible for any scholarship award. Unless otherwise indicated, all awards are made by the Committee on Scholarships, subject to the approval of the President. If a student to whom a scholarship has been awarded subsequently receives

another award of equal or greater value, the first scholarship may be withdrawn. Except when special arrangements are made, scholarships are to be used during the academic year for which they were awarded.

Scholarships available for graduate students are described in the section of the Catalog dealing with graduate study.

Trustee Undergraduate Tuition Scholarships

The Merritt Caldwell Fernald Scholarship, a tuition credit of $225, established by the Trustees and named in honor of the first acting president of the University, is awarded to the junior student having the highest scholarship rank in the University.

The James Stacy Stevens Scholarship, a tuition credit of $225, established by the Trustees and named in honor of the first Dean of the College of Arts and Sciences, is awarded to the highest ranking student, resident of Maine, in the junior class in that college, the winner of the Fernald Scholarship being excepted.

The Harold Sherburne Boardman Scholarship, a tuition credit of $225, in Technology, in honor of the first Dean of the College of Technology and the President of the University from 1926 to 1934, is awarded on the same terms as the foregoing.

The Leon Stephen Merrill Scholarship, a tuition credit of $225, in Agriculture, in honor of the Dean of the College of Agriculture from 1911 to 1933, is awarded as are the foregoing.

The Charles Davidson Scholarship, a tuition credit of $225, in the School of Education, in honor of the first professor of education in the University, is awarded as are the foregoing.

The Rising Lake Morrow Scholarship, a tuition credit of $225, in the College of Arts and Sciences, in honor of Doctor Morrow who was a member of the Department of History and Government from 1934 to 1944 and Acting Dean from 1942 to 1944.

The Maine Normal School Scholarships, three, of a tuition credit of $225 each, are awarded on a competitive basis to Maine normal-school students who, after two years of training for elementary teaching, desire to transfer to preparation at the University for secondary-school teaching. Only those are eligible whose normal-school record places them in the highest decile of their class, whose principal recommends them as having personal qualities which indicate probable success in high-school teaching, and who enter the School of Education as juniors, *for two years* of preparation for that field.

The Secondary School Contest Scholarships. The Trustees in 1943 amended a previous action taken in 1931 by establishing seventeen scholarships of a tuition credit of $225 each for the freshman year. These seventeen scholarships are awarded annually on the following basis: to each of five pupils who achieve in the Contest a standing in the first five positions on a state-wide basis; two in each of six districts (twelve in all) to each of two pupils who achieve in the Contest a standing in the first two positions in the district within which they compete. To be eligible to compete in the Contest a pupil must be a legal resident of the State of Maine, must be regularly enrolled for the first time in the fourth year of a Maine secondary school, and must have taken subjects required for admission to the University of Maine. The Contest is held in the spring of each year and an announcement concerning it is sent to all Maine secondary school principals well in advance of the

testing date. Each scholarship is awarded for one semester, but is continued for the second semester upon evidence of satisfactory work in the University.

The University Scholarships, fourteen, of a tuition credit of $225 each, established by the Trustees in 1935, are awarded annually to students of high scholastic standing and intellectual promise whose general record is also satisfactory and who are in need of financial assistance. Preference is given to students residing in the State of Maine.

Endowed Scholarships

The Maria S. Appleton Fund was established in 1939 through a bequest of $5,000 by the late Maria S. Appleton, of Bangor, to the University of Maine Foundation. The income of this fund is to be used for scholarships to be awarded annually to deserving and needy students.

The Appreciation Scholarship Fund was established in 1941 by R. H. West, of the Class of 1938. Further contributions have been made by others and the fund now amounts to $624. Awards are made from income to needy and deserving students in the College of Agriculture by a committee appointed by the Dean.

The Hosea B. Buck Memorial Scholarships, the income from a fund of $3,500 raised through the University of Maine Foundation, of which Mr. Buck was a charter member, were established in 1938 by friends and alumni of the University, in memory of Hosea B. Buck, of the Class of 1893. One or more scholarships are awarded annually to students whose high character, qualities of leadership, creditable academic record, and financial need make them worthy of scholarship aid.

The Emma Jane Eaton Scholarships, $100 each, were established in 1946 through a bequest of $10,000 to the University of Maine Foundation by the late Emma Jane Eaton of Calais, Maine. In accordance with the provisions of the will, these scholarships are awarded to students in the University who are graduates of Calais High School or who are natives of Washington County, and whose character, academic record, qualities of leadership and need make them worthy of financial aid. These scholarships may be awarded to entering students who have made an outstanding secondary school record and who need and merit financial aid.

The Joseph Rider Farrington Scholarship, the income from a $1,000 bond, a gift of Arthur M., Edward H., Oliver C., Horace P., and Wallace R. Farrington, all graduates of the University of Maine and sons of Mr. and Mrs. Joseph Rider Farrington, is offered annually in honor of their parents, in the following order of preference: (a) Any direct descendant of Joseph Rider and Ellen Holyoke Farrington, or anyone whom three of such descendants may select; (b) Any student bearing the surname of Farrington or Holyoke; (c) A high-ranking student in the College of Agriculture of good character and personality who, in the judgment of the Faculty Committee on Scholarships, is most deserving of the award.

The Ella Somerville Foster Scholarship was established in 1946 through a bequest of $1,000 by the late Ella Somerville Foster. The income of this fund is to be devoted to assisting a deserving Canadian or Newfoundland student.

The Eugene Hale Scholarship Fund of $1,200 was established by Mrs. Eugene Hale and her two sons, Frederick Hale and Chandler Hale, in honor of the late United States Senator Eugene Hale. The income is utilized in awarding one scholarship yearly to a boy or girl entering the College of Agriculture who is or has been a 4-H club member. The award is to be based on his or her record as a 4-H club member, on scholarship, character, and qualities of leadership. The

award will be made by a committee appointed by the Dean of the College of Agriculture.

The James Norris Hart Scholarships, the income from a fund of $7,000 raised through the University of Maine Foundation in 1937 by alumni, faculty, and friends, in honor of Dean Emeritus James Norris Hart, are awarded annually to entering students or upperclassmen who have made satisfactory scholastic records, who have been leaders in extracurricular activities, and who merit and need financial aid.

The Philip R. Hathorne Scholarship was established in 1936 through a bequest of $5,000 by the late David Ernest Hathorne, of Woolwich, Maine, and an additional gift of $2,000 by Mrs. Carrie E. Hathorne, as a memorial to their son, Philip R. Hathorne, of the Class of 1923. The income is used to help needy students in the Civil Engineering curriculum, preference to be given to natives of Maine.

The Hovey Memorial Scholarships, made available by a fund of $5,900, established in 1932 by the Stone and Webster Corporation and its employees in honor of the late Francis J. Hovey, are awarded to students in the College of Technology, on the basis of scholastic attainment, character, and general promise. A scholastic standing of at least 3.00 must be attained to be eligible, and must be maintained during tenure. Award is made by the Dean and the heads of the departments in the College, subject to the approval of the President, with preference given to students residing in the State of Maine.

The Carrol C. Jones Scholarship, the net income from a fund of $1,000 bequeathed by Minnie E. Jones, of Solon, in memory of her son, Carrol C. Jones, of the Class of 1914, is awarded annually to the student who makes the greatest improvement in his or her college work during the freshman year.

The Kidder Scholarship, endowed in 1890 by Dr. Frank E. Kidder, of Denver, Colorado, a graduate of the University in the Class of 1879, is awarded by the Committee on Scholarships, with the approval of the President, to a student whose rank excels in his junior year.

The Maine Farm Bureau Fund Scholarship, the income from a fund of $3,057, is awarded annually to a junior or senior student, resident of Maine, in the College of Agriculture, on a basis of character, scholarship, financial need, and qualities of leadership. The Dean of the College of Agriculture, the Secretary of the Farm Bureau Federation, and the Accountant of the University constitute the committee on award.

The Calvin H. Nealley Scholarships were established in 1942 through a gift of $5,000 by Mr. Calvin H. Nealley of the Class of 1892. The net income of the fund is to be used for scholarships for needy men students of the University whose homes are in Maine; whose character, industry, and promise make them worthy of assistance in obtaining their education.

The Perley Burnham Palmer Scholarship Fund of $1,500 was established in 1946 by Mrs. Perley B. Palmer in memory of her late husband. The income from this fund is to be used for a scholarship to be awarded annually to a needy and deserving student in the College of Technology.

The William Emery Parker Scholarship, the income from a $1,000 bond donated by the late Hosea B. Buck, of the Class of 1893, in memory of William Emery Parker, of the Class of 1912, is awarded annually to that male student of the sophomore or junior class who, in addition to being above the average rank scholastically, shows most clearly those qualities of manliness, honesty, and constructive effort which characterized the college career of the alumnus in whose memory the scholarship is given.

The Charles H. Payson Scholarships, $100 each, were established in 1935 through a gift of $20,000 made by the late Mrs. Charles H. Payson, of Portland, in memory of her husband. The principal of the fund was increased by $26,000 through a contribution received from Mrs. Payson in 1945. These are awarded to students in the University whose homes are in Maine and whose high character, qualities of leadership, creditable academic record, and financial need make them worthy of scholarship aid, or to entering students of outstanding merit who without financial assistance could not attend the University.

The Stanley Plummer Scholarship, the income from $1,000, the bequest of Colonel Stanley Plummer, of Dexter, Maine, is awarded annually to a needy and deserving student selected by the Committee on Scholarships. Students born in Dexter, Maine, shall have preference.

The Anne E. Stodder Scholarship Fund was established in 1943 through a bequest of $50,000 by the late Mrs. Anne E. Stodder, of Bangor, Maine. The net income of the fund is to be used for the assistance of needy and deserving students in obtaining their education under such University regulations as may apply to the award of scholarships.

The Bertha Joy Thompson Scholarships, established in 1935 through a bequest of $15,000 by the late Mrs. Bertha Joy Thompson, of Ellsworth, are awarded to students whose qualities of character, scholarship, initiative, and need make them worthy of financial assistance.

The Sergeant Walter McClymonds Wales Scholarship Fund of $25,000 was established at the request of the late Sergeant Walter McClymonds Wales, of the First Infantry Division, A.U.S., before he left for service overseas in 1942, because of his love for and interest in Northport, Maine. The annual income from the Fund is used for scholarship aid for students whose character and promise make them worthy of financial assistance in obtaining their education. Preference shall always be given to prospective or enrolled students from Northport, Maine, but if, in any year, available income from the Fund is not needed for Northport students, it may be used to assist worthy students whose homes are in other Maine communities. Especially meritorious young men and women from Northport who have completed their undergraduate education at the University of Maine may be given grants in aid from the income of the Fund for graduate or professional study at the University or at other institutions. Awards shall be made by the University committee responsible for the granting of scholarships and aid, subject to the approval of the President of the University.

The Charles F. Woodman Fund, amounting to over $17,000, was established in 1939 through a bequest by the late Charles F. Woodman, of Auburn, Maine. The net income is to be used annually under the direction of the President and Trustees of the University for the assistance of deserving and needy students, "especially poor boys who are desirous and willing to work and earn an education."

Annual Scholarships

The Elizabeth Abbott Balentine Scholarship, $75, the gift of the Gamma Chapter of Alpha Omicron Pi, is awarded by the Committee on Scholarships to a woman student, on recommendation of the Chapter with the approval of the President, on a basis of scholarship and individual need.

The Esso 4-H Scholarship, of $100 a year for four years, is available to an outstanding 4-H Club boy on the basis of the satisfactory completion of three years

of 4-H Club work, graduation from high school in the upper half of his class, need, merit, and ability. Continuance of the scholarship after the first year is contingent on the maintenance of a satisfactory record. Award is made by a committee comprising the Dean of the College of Agriculture, the Assistant Director of Extension, and the State 4-H Club Leader.

The Stanley D. Gray Scholarship Fund. The University has received from Miss Lula D. Eames, Trustee U/W of the late Stanley D. Gray, $5,600 to be used as stipulated in the late Mr. Gray's will: "In such way as most effectively to aid in securing a liberal education to such student, male or female, whose father or mother was a Gray descended from one of the name who settled in what is now Hancock Co., Maine, prior to the year eighteen hundred, as may be decided upon as most worthy of aid. Any superintendent of schools of any town in said County of Hancock may recommend students for such aid."

The Great Atlantic and Pacific Tea Company Scholarships, four scholarships of $75 each, are available to students in Home Economics on the basis of character, financial need, promise of leadership, and scholarship, with special consideration to needs of entering students. Four scholarships of $100 each are available to juniors and seniors majoring in Agricultural Economics and Farm Management, on the basis of character, scholarship, qualities of leadership and interest in distribution and marketing. Awards are made by a committee comprising the Dean of the College of Agriculture, the head of the department concerned, and one or more members appointed by the Dean.

The Charles H. Hood Dairy Foundation Scholarships, seven, of $200 each, are available to men and women four-year students of the College of Agriculture whose intention is to promote farming as a life opportunity, and two, of $100, are available to second year students of the Two-Year Course in Agriculture whose ultimate objective is employment on or operation of a commercial dairy farm. They are awarded by a committee comprising the Dean of the College of Agriculture, the head of the Department of Animal Industry, and the Treasurer of the University. The four-year scholarships are distributed as follows: Two sophomore and two junior scholarships are granted to students whose scholastic standing for the previous year places them in the upper half of their class; and three senior scholarships are granted to students whose scholastic standing for the previous year places them in the upper third of the class. The junior and senior scholarships are further restricted to students specializing in some phase of dairy industry promotion.

The Sears-Roebuck Agricultural Foundation Scholarships, fourteen, of $100 each, established in 1940, are available to Maine farm boys entering as freshmen in the four-year course in agriculture. The award is made by a committee comprising the Dean of the College of Agriculture and such others as he may designate. The awards are to be based on character, scholarship, qualities of leadership, and financial need. An additional scholarship of $200 is to be awarded to that sophomore who as one of the winners of the Freshman Scholarships achieves the most satisfactory record and is considered to be the most deserving from the standpoint of financial need and otherwise by the committee on awards.

The WGUY Radio Station Scholarships, four scholarships of $100 each, are available to students in the College of Agriculture who may have been or are 4-H Club members. Preference is given to juniors and seniors who have been outstanding in 4-H club work. Awards are made on the basis of character, scholarship, financial need, and qualities of leadership by a committee appointed by the Dean of the College of Agriculture.

The Women's Student Government Association Scholarships, of $50 each, are awarded to deserving women students who are in need of financial assistance and whose conduct and scholarship record are satisfactory. Award is made by the Committee on Scholarships on recommendation of the Dean of Women and the Student Council.

Alumni Scholarships

The Class of 1905 Scholarship, the income from a $1,000 bond, donated by members of the Class of 1905, is awarded to a man of the freshman class pursuing a regular curriculum, whose deportment is satisfactory, and who attains the highest rank in the mid-year examinations.

The Class of 1909 Scholarship, the income from a fund of $2,000 presented to the University of Maine Foundation by the members of the Class of 1909, is used for scholarship awards to worthy students in need of financial aid.

The Class of 1911 Scholarship, the income from a fund of $3,725 donated to the University of Maine Foundation in 1936, is awarded annually to an upperclass student of good character and satisfactory conduct and rank, who possesses qualities of leadership and who needs and merits financial aid. Special consideration is given to sons and daughters of members of the Class.

The Class of 1915 Student Aid Fund, the income from a fund of $3,762 given in trust to the University of Maine Foundation, is to be used by the President of the University at his discretion for assisting needy students in such manner and amounts as he deems expedient.

The Class of 1916 Scholarship, the income from a fund of $1,000 donated to the University of Maine Foundation in 1941, is awarded annually to a student of good character who needs and merits financial aid.

The Class of 1917 Scholarship, the income from a fund of $2,000 presented to the University of Maine Foundation in 1942, is awarded annually to an upperclass student of good character and satisfactory rank, who possesses qualities of leadership and who needs and merits financial aid. Special consideration is given to sons and daughters of members of the Class of 1917.

The Class of 1919 Fund, the income from a gift of $1,000 presented to the University of Maine Foundation in 1944, is to be used for a scholarship to be awarded annually to a student of good character who needs and merits financial aid.

The Chicago Alumni Association Scholarship, $50, established in 1903, is awarded annually to a sophomore pursuing a regular curriculum whose deportment and rank during the freshman year are satisfactory, and whose need, worthiness and all around ability are known.

The Lincoln County Alumni Association Scholarship, $50, established in 1935, is awarded annually to an upperclassman whose home is in Lincoln County, on a basis of satisfactory academic record and conduct, qualities of leadership, and financial need.

Northern Aroostook Alumni Association Scholarship, $50, established in 1935, is awarded annually to an upperclass student on a basis of satisfactory scholastic record and conduct, financial need, and qualities of leadership.

The Northern Connecticut Alumni Association Scholarship, $50, established in 1935, is awarded annually to a needy and deserving student, with preference given to students from Northern Connecticut.

The Ohio Alumni Association Scholarship, $50, established in 1934, is award-

ed annually to a student whose character, scholarship, and need justify the award.

The Penobscot County Alumni Association Scholarship, $50, was established in 1920 and endowed by creating a gift of a fund of $1,250 to the University of Maine Foundation in 1940. This scholarship is awarded by the President of the University, the Executive Secretary of the General Alumni Association and the University Committee on Scholarships, to a male student whose home is in Penobscot County, who is found to be needy and deserving, and whose scholarship and conduct are satisfactory.

The Philadelphia Alumni Association Scholarship, $50, established in 1935, is awarded annually to some needy and deserving student, with preference given to the vicinity of Philadelphia.

The Piscataquis County Alumni Association Scholarship, $100, established in 1937, is awarded annually to an upperclass student whose home is in Piscataquis County, who has made a satisfactory record and who needs and merits financial assistance.

The Portland Alumnae Association Scholarship, $50, established in 1938, is awarded annually to a deserving upperclass woman whose home is in Cumberland County. The award is made upon the basis of need of financial assistance, satisfactory record and conduct, and evidence of qualities of leadership and of scholastic attainment.

The Rhode Island Alumni Association Scholarship, $50, established in 1935 and endowed in 1945 by a gift of $1,500 to the University of Maine Foundation, is awarded to a male student from Rhode Island or that portion of Massachusetts included in that Association, whose personal and scholastic record is satisfactory and who has been prominent in extracurricular activities.

The Western Pennsylvania Alumni Association Scholarship, $30, established in 1905, is awarded annually to a member of the junior class in the College of Technology whose ability and need justify the award. The selection is made by the President and the Dean and professors of the College of Technology.

The Worcester County, Massachusetts, Alumni Association Scholarship, $50, established in 1935, is awarded annually to a worthy student from Worcester County, preferably an entering freshman.

The York County Alumni Association Scholarship, $50, established in 1935, is awarded to an upperclass man from York County whose scholastic record and conduct are satisfactory, who possesses qualities of leadership, and who needs and merits financial aid.

PRIZES

Endowed Prizes

The Prize of the Class of 1873, the income from $1,000, the gift of Russell W. Eaton, of Brunswick, a member of the Class of 1873, is awarded annually to that member of the sophomore class who is able to show the greatest improvement in mechanical drawing during the first two years of his college course. It is expected that candidates for this prize shall have had no training in mechanical drawing previous to entering the University.

The Claude Dewing Graton Prize, the income from four shares of stock donated by Mr. Graton, of the Class of 1900, is awarded annually to a regularly enrolled undergraduate student under twenty-five years of age who shall have

written the best essay on some current constitutional question. Entry for competition should be made with the Professor of Government before January 1.

The Henry L. Griffin Prize in English Composition, the income from a fund of $250, established in honor of the late Rev. Henry L. Griffin, of Bangor, is awarded by the Department of English for excellence in the freshman course in composition. The chief basis of the award is a competition in writing held during the month of April.

The Robert C. Hamlet Prize, $50, established in 1935, in accordance with the will of Mr. Hamlet, a graduate of the University in the Class of 1925, is awarded annually to that student in the University who shall have written the best original one-act play during the year of award. The judges are the Dean of the College of Arts and Sciences, the head of the Department of English, and the president of the Maine Masque.

The Maine Hardwood Association Fund. The income from a fund of $1,144, established in 1939, is awarded as prizes to students in the Forestry curriculum who present the best contributions in the form of essays on the subject of the marketing and utilization of Maine hardwoods. The rules of competition and the awarding of such prizes are to be determined by a committee consisting of the head of the Forestry Department and one or more other faculty members, appointed by the President of the University.

The John M. Oak Scholarship, the income from a fund of $1,500, established in 1935 by the estate of Mr. Oak, a graduate of the Class of 1873 and a Trustee of the University from 1908 to 1915, for the advancement of the art of public speaking in the University, is awarded annually to those upperclass students who deliver the best speeches of the persuasive type in a contest held for that purpose.

Annual Prizes

The Alpha Omicron Pi Alumnae Prize, $10, given by the Bangor Alumnae Chapter, is awarded annually to the woman student showing the greatest improvement in her work during her freshman year. The record at the Registrar's office, showing the comparison of grades of the fall semester with those of the spring semester, shall furnish the basis of award.

The Burpee Award in Horticulture, $100, is offered annually by the W. Atlee Burpee Company, of Philadelphia, to stimulate interest in the study of horticulture. The recipient is selected by the Dean of the College of Agriculture, the Head of the Department of Horticulture, and one other designated by the Dean, on the basis of character, scholarship, and interest and practical experience in vegetable or flower growing. Preference is given to a member of the junior class.

The Chi Omega Sociology Prize, $25, is offered annually by the Chi Omega Sorority, in accordance with its national policy, to the highest ranking woman of the junior or senior class who is majoring in sociology. General deportment and interest in the study of sociology may be considered in determining the award which is to be used for further study in this field.

The Hardison Essay Prize, the gift of Helen Crane Hardison, of the class of 1937, is awarded by the Department of English to the senior major student submitting the best critical essay as a part of the comprehensive major examinations in English.

The Maine Association of Engineers' Honor Award, $50 in cash, together with a Certificate of Award to a member of the senior class in the College of Tech-

nology, unanimously selected by a Committee of Award on the basis of high moral character, scholastic achievement, and qualities of leadership throughout his college career. The Committee of Award shall be composed of the Chairman of the Committee on Scholarships, the Dean of the College of Technology, and the President of the Maine Association of Engineers, or other member of the Association as he may designate. Presentation of the Award shall be made on Scholarship Recognition Day. All seniors in the College of Technology, whether graduating in February or June, shall be eligible for consideration by the Committee on Award.

The Carl Whitcomb Meinecke Award, the gift of Mrs. Carl W. Meinecke in memory of her late husband, is presented to a junior or senior majoring in the Department of Civil Engineering. The award is made on the basis of character, scholarship, and promise by the Dean of the College of Technology and the head of the Department of Civil Engineering.

The Mu Alpha Epsilon Award is given annually by the honorary musical society to a sophomore, junior, or senior showing promising musical talent who has had at least one year of participation in music at the University of Maine. The recipient, who must show the need of financial aid and be of acceptable academic standing, will be chosen by Mu Alpha Epsilon after audition. The award must be used for instruction in applied music and shall not be given to the same student two years in succession.

The Pale Blue Key Award, $50, is given each year to some member of the freshman class who needs help, has shown promise in track athletics in his freshman year, and has maintained a satisfactory scholarship standing. The award is made by a committee comprising the president of the Pale Blue Key, the coach of track athletics, and a member of the faculty to be chosen by the club, subject to the approval of the President. The winner will be given the award upon his return to the University in his sophomore year. Applications must be made in writing and sent to either the coach of track athletics or the president of the Pale Blue Key before April 15.

The Sigma Mu Sigma Award, $25, is given annually by the honorary society Sigma Mu Sigma to a member of the current sophomore or junior class who shall have completed at least a semester and a half of the introductory course in General Psychology, on a basis of proficiency, interest, and general promise in the subject. Nominations for the award are made to the president of the society by the instructors in the course about the middle of the spring semester, and it becomes available upon the student's return to the University in the following semester.

The Spanish Club Prize, $10, is awarded annually by the Circulo Español for excellence in Elementary Spanish to a freshman student, on the basis of a competitive examination.

The Class of 1908 Commencement Cup, donated by the Class of 1908, is awarded at Commencement to that graduate class the largest percentage of whose living members register before six o'clock on Alumni Day.

The President's Cup, named in honor of the presiding officer of the General Alumni Association, is awarded at Commencement to that graduate class having the largest total number of members registered before six o'clock on Alumni Day.

The Twentieth Century Cup, given by the New York Alumni Association, is awarded annually at Commencement to that graduate class in the Twentieth Century group, the largest percentage of whose members register before six o'clock on Alumni Day.

The Sigma Chi Foundation Scholarship Cup, donated in 1947 by Mr. Raymond Fogler of the Class of 1915 through the Sigma Chi Foundation, is awarded semi-annually to the fraternity whose active members attain the highest standing in scholarship for the preceding semester. The cup will become the permanent property of the fraternity to which it is awarded the greatest number of times during a fifteen-year period. If two or more fraternities win the cup the same number of times, the cup shall be awarded to the tying fraternity having the highest cumulative scholastic standing for the entire fifteen-year period.

The Charles Rice Cup, presented in 1921 by the Kappa Sigma Fraternity in honor of Charles Anthony Rice, of the Class of 1917, who was killed in service, is held for one year by the team winning the Intramural Track Championship.

The Intramural Plaques are presented each year by the Intramural Athletic Association to the fraternities making the best showing in each major intramural sport, and an all-point plaque is given to that fraternity which makes the best performance in all the sports.

The Washington Alumni Association Watch is presented annually by the Alumni Association of Washington, D. C., to the male member of the graduating class who, in the opinion of the students and the University administration, has done the most for the University during his course. This award is made as the result of a secret ballot by the students, passed upon by the President and the Administrative Committee.

The Portland Alumnae Memorial Watch is presented annually by the Portland Club of University of Maine Women to the woman member of the graduating class who, in the opinion of the students and the University administration, has done the most for the University during her course. This award is made as a result of a secret ballot by the students, passed upon by the President and the Administrative Committee.

GENERAL ALUMNI ASSOCIATION

OFFICERS AND COUNCIL MEMBERS
1947-48

OFFICERS

*President—Hazen H. Ayer '24, 50 Congress St., Boston, Mass.
*Vice President—Harold J. Shaw '14, Sanford, Me.
Clerk—George F. Dow '27, Orono
Treasurer—Richard S. Bradford '30, Myrtle St., Orono
Executive Secretary—John C. Sealey, Jr. '36, Orono
Assistant Secretary—Philip J. Brockway '31, Orono

ALUMNI COUNCIL MEMBERS

	Term Expires
Collins, Samuel W. '19, Caribou	1948
*Kelley, Miss M. June '12, 27 Florence Ave., Norwood, Mass.	1948
*Lord, George E. '24, Orono	1948
Chandler, Clifton E. '13, 113 Highland St., Portland	1949
Fraser, Miss Jessie '31, R.F.D. 7, Bangor	1949
Knight, Fred D. '09, 266 Pearl St., Hartford, Conn.	1949
*Littlefield, Alton T. '21, 313 State St., Augusta	1949
Pendleton, Emily '26, Dark Harbor	1949
Priest, Conan A. '22, 314 Hulbert Dr., Syracuse, N. Y.	1949
Raymond H. Fogler '15, W. T. Grant Co., 1441 Broadway, New York, New York	1950
Mangan, Thomas G. '16, 22 Church St., Livermore Falls	1950
Martin, Miss Marion '34, Dept. of Labor and Industry, State House, Augusta	1950
*Sims, James M. '32, W. T. Grant Co., 45 Bromfield St., Boston, Mass.	1950
Murphy, Mrs. Marjorie M. '33, 868 Sawyer St., So. Portland	1950
Crossland, Charles E. '17, Orono	1950
Thurrell, Robert F. '15, East Wolfeboro, New Hampshire	1950
College of Agriculture	
*Peabody, Myron C. '16, 42 Dartmouth St., Springfield, Mass.	1950
College of Arts and Sciences	
Mahoney, John H. '27, 43 Brownell St., Worcester, Mass.	1948
College of Technology	
Lingley, Alfred B. '20, Kleistone Rubber Co., Inc., Warren, R. I.	1950
College of Law	
Weeks, Thomas N. '16, 110 Main St., Waterville	1949
Alumni Representative on Board of Trustees	
Pierce, Harold M. '19, Box 58, Bangor	1948

* Executive Committee.

CLASS OFFICERS

SENIOR ALUMNI—
President—Harry M. Smith '93, 239 Cedar St., Bangor
Secretary—James N. Hart '85, 67 Bennoch St., Orono
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Secretary—C. Parker Crowell, 36 Howard St., Bangor
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1900—President—Fred H. Vose, 2601 Charney Rd., University Heights, Cleveland, Ohio
Secretary—E. J. Mann, West Paris
—James A. Hayes, Bridgewater Rd., Upland, Pa.
1901—President—H. H. Leonard, 43 Lockwood Rd., Scarsdale, N. Y.
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1902—Secretary—Henry W. Chadbourne, 29 Bruce St., Scotia 2, N. Y.
1st Asst. Secretary—Henry Cole, 6221 Wellesley Ave., Pittsburgh, Pa.
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Secretary—Leslie E. Little, Bucksport
1905—President—Horace A. Hilton, 385 Union St., Bangor
1906—President—A. Guy Bennett, 308 Rose Park Drive, Moore Park, Toronto, Canada
Secretary—Henry W. Bearce, Hebron, Maine
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1908—President—Raymond Fellows, 395 Union St., Bangor
Secretary—James A. Gannett, Alumni Hall, Campus
1909—President—Fred D. Knight, 266 Pearl St., Hartford, Conn.
Secretary—Harold A. Rich, 78 Adella Ave., W. Newton 65, Mass.
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Secretary—Grover T. Corning, 30 Federal St., Boston, Mass.
1911—President—Harry Homans, 143 Maple St., Bangor
Secretary—Avery C. Hammond, 287 Ohio St., Bangor
1912—President—Karl D. Woodward, 259 Broadway, Lachine, Quebec
Secretary—William E. Schrumpf, Winslow Hall, Orono
1913—Secretary—James E. Church, 192 Northern Ave., Gardiner
1914—President—Howe W. Hall, U. of M., Orono
Secretary—Richard F. Crocker, Fort Kent
1915—President—Raymond H. Fogler, W. T. Grant Co., 1441 Broadway, New York City, N. Y.
Secretary—Robert F. Thurrell, East Wolfeboro, N. H.
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1917—President—Lt. Col. Joseph A. McCusker, 80 Dunster Road, Jamaica Plain, Mass.
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Secretary—Margaret Blethen, 14 Beacon St., Boston, Mass.
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1924—President—Hazen H. Ayer, 50 Congress St., Boston, Mass.
Secretary—Theron Sparrow, 100 Main St., Orono
1925—President—Frank Hussey, 63 Dyer St., Presque Isle
Secretary—Mrs. Louise Q. Lord, 38 Forest Ave., Orono
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Secretary—Miss Cora Emery, 15 Skahan Rd., Belmont, Mass.
1927—President—Paul Lamoreau, 92 Grant St., Bangor
Secretary—Mrs. Edith B. Thaxter, 106 Fountain St., Bangor
1928—President—David W. Fuller, 414 Eastern Trust Bldg., Bangor
Secretary—Mrs. Thelma Dudley, 34 Cottage Farms Rd., Cape Elizabeth
1929—President—Robert D. Parks, Ridge Rd., Concord, Mass.
Secretary—Miss Barbara Johnson, 32 Orland St., Portland
1930—President—William H. Daley, 415 Congress St., Portland
Secretary—Kenneth Haskell, 22 Brewer St., Portland
1931—President—Samuel Sezak, U. of M., Orono
Secretary—Doris Gross, 101 Lincoln St., Millinocket
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Secretary—Mrs. Albert F. Gerry, 17½ Spring St., Brewer
1933—President—Russell Shaw, 76 William St., Portland
Secretary—Mrs. Dorothy F. Carnochan, 37 Falmouth St., Portland
1934—President—Philip S. Parsons, Hampden Highlands
Secretary—Mrs. Robert C. Russ, 39 Farm Hill Rd., Cape Elizabeth
1935—President—George L. Cobb, 21 Mansfield Ter., Middletown, Conn.
Secretary—Mrs. Thomas McGuire, 209 W. 107th St., Apt. 3W, NYC, N. Y.
1936—President—John Sealey, Jr., M. of M., Orono
Secretary—Mrs. Phyllis H. Webster, Box 215, Hampden Highlands
1937—President—Dr. Lucian Scammon, 1158 Main St., Agawam, Mass.
Secretary—Mrs. Richard Cash, Morse High School, Bath
1938—President—John R. Gowell, 70 Beacon St., Bridgeport, Conn.
Secretary—Mrs. Mary Deering Wirths, 47 Falmouth St., Portland
1939—President—Dana E. Drew, Fairfield
Secretary—Mrs. Donald Huff, 292 Main St., Calais
1940—President—Kenneth G. Burr, 41 York St., Kennebunk
Secretary—Mrs. Alice Ann Poeppelmeier, 121 Main St., Houlton
1941—President—George H. Ellis, 83 Webster Rd., Weston, Mass.
Secretary—Mrs. Hilda Marvin, Winterport
1942—Honorary President—Edward P. Barrows (Deceased)
Vice President—Stanley G. Phillips, The University Club, 546 Deleware Ave., Buffalo 2, N. Y.
Secretary—Mrs. Barbara Cuetara, 125 Peterborough St., Boston, Mass.

1943—President—Talbot Crane, 45 Garden St., Boston, Mass.
Secretary—Mrs. Joanne S. Logan, 706 Lowell Rd., Harvard Devens Village, Ft. Devens, Mass.
1944—President—Edward H. Phillips, 1710 Texas Ave., c/o Ingersoll Rand, Houston, Texas
Secretary—Esther Randall, 98 State St., Portland
1945—President—James Donovan, Phi Gamma Delta, Campus
Secretary—Miss Ada Minott, Phippsburg
1946—President—Ralph Emerson, Island Falls
Secretary—Mildred Byronas, 158 Blake St., Lewiston
1947—President—Clement E. Vose, 8 Watson Ave., Houlton
Secretary—Marguerite R. Googins, 85 Myrtle St., Westbrook

HONORS AND PRIZES AWARDED

Members of Honor Societies arranged in order of their establishment at the University of Maine.

Members of Phi Kappa Phi

1947

Holyoke Purinton Adams, Melrose, Mass.; Louisa Mae Bacon, Naples; Malcolm Hinckley Blodgett, West Brooksville; Irving Seymour Broder, Bangor; Dorothy May Bruns, Bangor; Gurdon Saltonstall Buck, Naples; Shirley Reed Castner, Bangor; Arlene Marjorie Cleven, Portland; Marian Harris Comstock, Millinocket; Ray Edward Corliss, Sherman Mills; Charles Francis Crocker, Centerville, Mass.; Donald Erwin Crossland, Orono; Evelyn Elaine Foster, Bangor; Gladys Friedler, Lewiston; Pauline Marie Gilson, South Portland; Richard Augustus Hale, 2nd, Lisbon Falls; Eunice Elizabeth Hammond, Farmington; Lois Ann Hovey, Island Falls; Nicholas Harry Johns, Portland; Elizabeth Benedict Leith, Machiasport; Richard Willard Lemay, Bar Harbor; Paul Foster McGouldrick, Jr., Bangor; Grover Bert MacLaughlin, Stillwater; Barbara Ellen McNeil, Orono; Barbara Louise Mills, Bangor; Stanley Allen Murray, Rockland; Florence Louise Palmer, Wales; Phyllis Carter Pendleton, Caribou; Muriel Elaine Polley, Portland; Lois Elizabeth Ricker, Portland; Norman Whittier Rollins, Portland; Alpheus Sanford, Brunswick; Edith Jeannette Strout, Bangor; Vaughn Raymond Sturtevant, Livermore Falls; Isabelle Elaine Trefethen, South Portland; Anne Bailey Woods, Ellsworth.

Members of Tau Beta Pi

1947

George Francis Bagley, Orono; Josiah Edward Colcord, Jr., South Portland; William Joseph Cullen, Auburn; Charles Sumner Cushing, Jr., Portland; Joseph Harold Dondis, Rockland; Jenness Pearl Eugley, Orono; Benjamin Franklin Hodges, Jr., Reading, Mass.; Nicholas Harry Johns, Portland; Frederick Sawtelle Jones, Jr., Stamford, Conn.; Leonard Richard Korobkin, Lowell, Mass.; George Robert Leavitt, Bangor; Richard Willard Lemay, Bar Harbor; Robert Joseph Lurvey, Schenectady, N. Y.; Eldon Harmon Luther, Hartford, Conn.; Stanley Allen Murray, Rockland; Thomas Arthur Murray, Jr., Hampden Highlands; Robert Carlyle Petterson, Bangor.

1948

John Paul Bibber, Auburn; Amos Jay Carr, Jr., Cape Cottage; Chester Allen Darling, Orleans, Mass.; Kent Eric Erickson, Spruce Pine, N. C.; Earl Radford Evans, Jackson Heights, N. Y.; Kenneth Algret Foss, Monmouth; William Carter Gibson, Greenwich, Conn.; Arthur Willard Hamlin, Unity; Paul Ernest Grant, Auburn; Monson Henry Hayes, Jr., Portland; Bradford Thomas Joyce, Portland; Stephen Cecil Knight, Jr., Waterville; Walter Norman Low, South Portland; James Arthur Maxim, Mechanic Falls; Robert Haley Parmenter, Portland; Donald Pratt, Dover-Foxcroft; Ray DeWitt Roley, Bangor; Edward Leon Smiley, Skowhegan; Robert Worthing Smith, Lewiston.

1949

Carleton Merle Brown, Woodland.

Members of Xi Sigma Pi

1947

Sumner Lawrence Burgess, Sangerville; Stanley Wilford Frost, Norway; Richard Augustus Hale, 2nd, Lisbon Falls; James Leland Haskell, Cohasset, Mass.; Arnold Hedlund, Belmont, Mass.; Stephen Loring Jacobs, Hingham, Mass.; Harry Richard Keiser, Wilmette, Ill.; George Robert Weidman, Providence, R. I.

1948

Arnold Joy Cohen, New York, N. Y.; Neal Hiram Gundersen, Cranford, N. J.; Victor Carl Suneson, Middlebury, Vt.; Robert Morris Thompson, Wellesley, Mass.

Members of Phi Beta Kappa

1947

Malcolm Hinckley Blodgett, West Brooksville; Irving Seymour Broder, Bangor; Dorothy May Bruns, Bangor; Shirley Reed Castner, Bangor; Arlene Marjorie Cleven, Portland; Marian Harris Comstock, Millinocket; Donald Erwin Crossland, Orono; Gladys Friedler, Lewiston; Eunice Elizabeth Hammond, Farmington; Lois Ann Hovey, Island Falls; Paul Foster McGouldrick, Jr., Bangor; Barbara Ellen McNeil, Orono; Phyllis Carter Pendleton, Caribou; Muriel Elaine Polley, Portland; Alpheus Sanford, Brunswick; Vaughn Raymond Sturtevant, Livermore Falls; Anne Bailey Woods, Ellsworth.

1948

Ripon Wilson Haskell, Deer Isle; Arthur Merle Hillman, Kenduskeag.

Members of Omicron Nu

1947

Louisa Mae Bacon, Naples; Jacqueline Elizabeth Brown, Augusta; Rachel Whitney Jones, Auburn; Effie Marie Nutter, Corinna; Lois Elizabeth Ricker, Portland; Isabelle Elaine Trefethen, South Portland.

1948

Ruth Peabody Fogler, Hastings-on-Hudson, N. Y.

Members of Kappa Delta Pi

1947

Leo Bradley Bunker, Jr., Franklin; Grace Luscombe Dodge, Boothbay; Doris Ada Hobart, Princeton; Nathan Sargent Joy, Winter Harbor; Eulila Chase Ludden, Old Town; Grover Bert MacLaughlin, Stillwater; Eugene Alberto Mawhinney, Jonesboro; Thornton Whitney Moore, Pittsfield; Priscilla Ann Roberts, Bangor; Lawrence Edward Standish, Cranberry Isles; Lawrence Marvin Sturtevant, North

Belgrade; Clifford Perham Tinkham, Bangor; Helen Esther Whitney, Farmington; Leslie Howard Whittemore, Old Orchard Beach.

1948

Ruth Joanne Berglund, Bar Harbor; Natalie Burnett Mayo, Southwest Harbor; Elmer Wallace Parsons, Schenectady, N. Y.; Alice Guptill Robinson, Portland; Alge John Vaitones, Auburn.

SCHOLARSHIPS AND PRIZES

1947-48

The Merritt Caldwell Fernald Scholarship—Arthur Merle Hillman, Levant.

The James Stacy Stevens Scholarship—Ripon Wilson Haskell, Deer Isle.

The Harold Sherburne Boardman Scholarship—Robert Haley Parmenter, Portland.

The Leon Stephen Merrill Scholarship—Ruth Peabody Fogler, Hastings-on-Hudson, New York.

The Charles Davidson Scholarship—Elmer Wallace Parsons, Schenectady, New York.

The Rising Lake Morrow Scholarship—Janet Elizabeth Spiller, Westbrook.

The Maine Normal School Scholarship—John Isaac Seekins, Jr., Hampden.

The Secondary School Contest Scholarships—Walter Douglas Batchelder, Bangor; Bryce Edward Bayer, Portland; Elwood MacDougall Beach, Portland; Florence Mary Berube, Saco; Richard Mansir Bragdon, Gardiner; Lawrence Stanley Cobb, Portland; Raymond Lester Downs, Jr., Bangor; Harold Sidney Folsom, Jr., Portland; Graydon Jackson Fowles, Wiscasset; Mary Direxa Haynes, Bucksport; Hubert Coleman Hersey, Pittsfield; John Marlin Longley, Norway; Laurence Collins Peabody, Houlton; Douglas Levinson Riddiough, Machias; Dana Wilson Small, Bowdoinham; Alton Perry Swett, West Boothbay; Marilyn Mae Wyman, Lincoln Center.

The University Scholarships—David Francis Akeley, Presque Isle; Charles Russell Barr, Fairfield; Constance Adele Boynton, Augusta; Sherman Lorenzo Cole, West Paris; Terry Garcelon, Troy; Charlotte Maxine Lenentine, Monticello; Gloria Estelle McGinley, Hermon; Pauline Rita Marcous, Lewiston; Aletha Luetta Meade, Auburn; Virginia Noel, Orono; Helen Elizabeth Noyes, Farmington; Raymond Leo Olmsted, Charleston; Shirley Jean Stedman, Hartland; Thomas Ware Wight, Belfast.

Trustee Graduate Scholarships—Virginia Hinds Chute, Stillwater; Marian Harris Comstock, Millinocket; Elda Lena Gallison, Lambert Lake.

The Maria S. Appleton Fund Scholarships—Ada Mae Marsh, Bangor; Patricia Palmer, Levant.

The Appreciation Scholarship Fund—No award.

The Hosea B. Buck Memorial Scholarship—Foster Irvin Gordon, Medway.

The Joseph Rider Farrington Scholarship—No award.

The Ella Somerville Foster Scholarship—No award.

The Eugene Hale Scholarship—Mary Elizabeth Putnam, Monroe.

The James Norris Hart Scholarships—Agnes Arline Gray, Machias; Robert Oscar Judkins, North Anson.

The Philip R. Hathorne Scholarship—No award.

The Hovey Memorial Scholarships—No award.

The Carrol C. Jones Scholarship—Wendall Owen Scott, Wilton.

The Kidder Scholarship—Divided between Dalmar Serner McPherson, Stillwater, and Barbara Vaughan, Belfast.

The Maine Farm Bureau Fund Scholarship—Louise Caswell Hilton, Norridgewock.

The Calvin H. Nealley Scholarship—George Richard Nelson, Portland.

The Perley Burnham Palmer Fund Scholarship—No award.

The William Emery Parker Scholarship—Don Childs Stanton, Sherman, New York.

The Charles H. Payson Scholarships—Charlotte Ann Alex, Skowhegan; Beverly Estelle Bean, Auburn; Marie Ellen Bean, Mount Vernon; Beverly Rae Peacock, Auburn; Betty Quimby, Brooks; Eleanor Mae Thompson, Westbrook; Joan Wentworth, Kennebunk Beach.

The Stanley Plummer Scholarship—No award.

The Anne E. Stodder Fund Scholarships—Dorothy Ann Averill, Bangor; Martha Gertrude Bond, Jefferson; Elizabeth Mordaunt Burgess, Orono; Jean Lorraine Burnell, Cumberland Center; Nancy Claire Chick, Limington; Ruth Margaret Connors, Old Town; Marita Ruth Crabtree, Union; Evelyn Ella Ellsworth, East Wilton; Mary Louise Haskell, Brewer; Edith Corinne Hayford, Portland; Louise Caswell Hilton, Norridgewock; Arolyn Roberta Johnson, Portland; Muriel Britt Kenderdine, Livermore Falls; Paul Milton Payson, Island Falls; Ruth Ellen Preble, Waterville; Doris Eleanor Pullen, Richmond; Rachel Seavey, Portland; Elizabeth Noreen Shaw, Caribou; Sylvia Lula Snow, Blue Hill; Doris Julia Stanley, Farmington; Beatrice Estelle Thornton, Portland; Katherine Pauline Walters, Readfield.

The Bertha Joy Thompson Scholarships—Mary Lou Fenlason, Fairfield; Priscilla Leverett Lord, Ellsworth; Julia Shores, New Gloucester; Elsie Marie Sjostedt, Stockholm; Esther Shirley Watson, Portland.

The Sergeant Walter McClymonds Wales Fund Scholarship—John Luther Ketner, Jr., Northport.

The Charles F. Woodman Fund Scholarships—Paul James Dowe, Weeks Mills; Barker William Hopkins, Rumford; Richard Freedom Huff, West Scarboro; Harold Linwood Moulton, Springvale.

The Elizabeth Abbott Balentine Scholarship—Barbara Mansfield Andrews, Orrington.

The Stanley D. Gray Scholarship Fund—Marian Louisa Stanley, Bar Harbor.

The Great Atlantic and Pacific Tea Company Scholarships—Richard Augustus Andrews, Princeton; Marie Ellen Bean, Mt. Vernon; Roland Joel Bouchard, Caribou; John Howard Bragg, Orono; Bertha Annette Clark, Lincoln; Donna Graves Harrington, Amherst, Massachusetts; Donald Martin Spiller, Mechanic Falls; Lorraine Elizabeth Stratton, Cumberland Center.

The Charles H. Hood Dairy Foundation Scholarships—Ralph Gordon Barrett, Brunswick; Charles Ernest Crawford, Dexter; John Alden Graffam, Gardiner; Jasper Charles Haggerty, Jr., Harrison; George Henry Millay, Richmond; Oral Dudley Page, Jr., Belgrade; Robert David Waterman, Sabattus.

The Sears-Roebuck Agricultural Foundation Scholarships—Herbert Alton Bridge, Cambridge; Charles Willard Buck, Norway; Philip Graves Coburn, Newport; Myron Powers Dean, Dover-Foxcroft; Allan Veda Dickey, Fairfield; Leslie LeRoy Duran, St. Albans; Stanley Arthur Ellsworth, Farmington; Paul Barton Kimball, Gorham; Fred Elmer Robinson, Fairfield; LeRoy Leon Sevey, Dexter; Dana Wilson Small, Bowdoinham; Frank Richard Smiley, Waterville;

Herbert James Sonier, Cumberland Center; Roger Leigh Stevens, East Corinth; George Dale True, Springfield.

The WGUY Radio Station Scholarships—Daniel Keller Andrews, West Rockport; Erna Lucy Bamford, Livermore Falls; AnnLee Frances Harmon, Caribou; Lawrence Merle Potter, Sabattus.

The Women's Student Government Association Scholarships—Germaine Catherine Bellefleur, Madison; Beatrice Estelle Thornton, Portland.

The Class of 1905 Scholarship—To be awarded.

The Class of 1909 Scholarship—Harriet Marie Elwell, Brooks.

The Class of 1911 Scholarship—Barbara Annette Thompson, Concord, New Hampshire.

The Class of 1916 Scholarship—Francis Terrence Decoteau, Saco.

The Class of 1917 Scholarship—Elizabeth Flint, West Baldwin.

The Class of 1919 Scholarship—Margaret Ellen Hurd, Oakland.

The Chicago Alumni Association Scholarship—Charles Edwin Treworgy, Milo.

The Lincoln County Alumni Association Scholarship—Martha Gertrude Bond, Jefferson.

The Northern Connecticut Alumni Association Scholarship—No award.

The Ohio Alumni Association Scholarship—Jean Muriel Lynaugh, White Plains, New York.

The Penobscot County Alumni Association Scholarship—No award.

The Philadelphia Alumni Association Scholarship—Marilyn Mae Seavey, Auburn.

The Piscataquis County Alumni Association Scholarship—No award.

The Portland Alumnae Association Scholarship—Edith Corinne Hayford, Portland.

The Rhode Island Alumni Association Scholarship—No award.

The Western Pennsylvania Alumni Association Scholarship—Carleton Merle Brown, Woodland.

The Worcester County, Massachusetts, Alumni Association Scholarship—No award.

The York County Alumni Association Scholarship—No award.

The Prize of the Class of 1873—Wesley Leroy Wight, Bradley.

The Claude Dewing Graton Prize—No award.

The Henry L. Griffin Prize in English Composition—Rachel Elaine Luce, Farmington.

The Robert C. Hamlet Prize—No award.

The Maine Hardwood Association Fund—No award.

The John M. Oak Scholarship Awards—First place, Freeman William Whitney, Bangor; second place, William McAdam Dow, Old Town; third place, Leon Earl Gray, Orono.

The Alpha Omicron Pi Alumnae Prize—Betty Jane Ladd, Hallowell.

The Burpee Award in Horticulture—Roland Charles Blake, Howland.

The Chi Omega Sociology Prize—Ruth Florence Wentworth, Orono.

The Hardison Essay Prize—First place, Malcolm Hinckley Blodgett, West Brooksville; second place, Dorothy Eloise Ward, Searsport.

The Carl Whitcomb Meinecke Award—Josiah Edward Colcord, Jr., South Portland.

The Mu Alpha Epsilon Awards—MaryAnne Dineen, Gardiner; Priscilla Goggin, Bethel; Paul Milton Payson, Island Falls; Margaret Ada Preble, Farmington.

The Pale Blue Key Award—Douglas Miller Morton, Presque Isle.

The Sigma Mu Sigma Award—Ruth Florence Wentworth, Orono.

The Spanish Club Prize—Beverly Jordan, Cape Elizabeth.

The Class of 1908 Commencement Cup—Class of 1897.
The President's Cup—Class of 1945.
The Twentieth Century Cup—Class of 1900.
The Sigma Chi Foundation Scholarship Cup—Tau Epsilon Phi (Spring, 1947).
The Charles Rice Cup—Kappa Sigma.
The Intramural Plaque—Sigma Alpha Epsilon.
The Washington Alumni Association Watch—Winslow Albert Work, Brewer.
The Portland Alumnae Memorial Watch—Evelyn Elaine Foster, Bangor.

COMMENCEMENT

June 1947

Friday, June 13

1:45 P.M.	Class Day Exercises—The Oval
3:15	All-Maine Women's Pageant—Coburn Green
4:00–5:00	President and Mrs. Hauck—"At Home"—President's House
8:00	Senior Commencement Ball

Saturday, June 14

10:30 A.M.	Alumni Association Meeting—Little Theatre
12:30 P.M.	Alumni Luncheon honoring 1897—Memorial Gymnasium
2:00	Concert by University Band—The Oval
3:00	Baseball—Alumni vs. Seniors—Baseball Field
3:30	Alumnae Tea for Alumnae, Faculty, Wives, and Guests— Sponsored by Penobscot County Alumnae—Estabrooke Hall
6:00	Alumni Banquet—Memorial Gymnasium
9:30	Alumni Hop—Memorial Gymnasium

Sunday, June 15

10:30 A.M.	Baccalaureate Services—Alumni Memorial
3:00 P.M.	Commencement Exercises—Alumni Memorial

DEGREES CONFERRED

February 7, 1947

COLLEGE OF AGRICULTURE

Bachelor of Science

IN AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

CLIFFORD HARMON KEIRSTEAD ..... Mapleton

IN ANIMAL HUSBANDRY

FRANK ASIA TRUE ..... East Corinth

IN DAIRY HUSBANDRY

ROBERT HARTSON DAY ..... Bryant Pond
CLEMENT STEVENS DUNNING ..... Brunswick
GERALD MADISON WARD ..... Thorndike

IN FORESTRY

PROCTOR WAYNE RANSDEN, *With Distinction* ..... Andover, Mass.
STEPHEN LEON ROBBINS ..... Kittery
JOSEPH ANDREWS YOUNG ..... Corea

IN WILDLIFE CONSERVATION

FREDERICK THOMAS BAIRD, JR. ..... Bangor
ROBERT ERNEST FOYE ..... Gardiner
JOHN HERBERT HUNT ..... Fairfield

COLLEGE OF ARTS AND SCIENCES

Bachelor of Arts

IN BUSINESS ADMINISTRATION

RICHARD COURTNEY BLOOM ..... North Haven
ALBERT DAY CROCKETT, JR. ..... Bangor
CARLTON ELMORE CROSSLAND ..... Orono
ALFRED HUTCHINSON ..... Danvers, Mass.
ROBERT MALCOLM MACGREGOR ..... Plattsburg, N. Y.
KENNETH PARKER MACLEOD ..... Brewer
GERALD MARCUS TABENKEN ..... Bangor

IN ENGLISH

LOUISE MAY AYER ..... Lincoln

IN FRENCH

WILLARD HALL WHITNEY ..... Bangor

IN HISTORY AND GOVERNMENT

DONALD LESLIE GOODWIN ..... Brewer
THOMAS FRANCIS VINCENT POWERS ..... Lewiston

IN MATHEMATICS

LOUIS WILLIAM HOWE, JR. ..... Greene

IN PSYCHOLOGY

MALCOLM HUBBARD MINER ..... Orono
CLARKE HARRIS WERTHEIM ..... Needham, Mass.

IN THEATRE

DAYSON DANIEL DECOURCY ..... Orono

IN ZOOLOGY

RAY AVERY COOK ..... Eastport
JACQUELINE MARVIS WILNER ..... Bangor

SCHOOL OF EDUCATION

Bachelor of Science in Education

LEO BRADLEY BUNKER, JR. ..... Franklin
ROBERT ERNEST DEAKIN ..... Livermore Falls
JAMES WATSON GRAY ..... Machias
JOHN HAROLD JOHNSTONE ..... Bangor
NATHAN SARGENT JOY ..... Winter Harbor
STANLEY JOSEPH KUS ..... Winthrop
LILLIAN ROBERTA MICHAUD ..... Fort Kent
LAWRENCE EDWARD STANDISH ..... Cranberry Isles
WILLIAM EDWARD STARBIRD ..... Dixfield
LESLIE HOWARD WHITTEMORE ..... Old Orchard Beach

IN COMMERCIAL EDUCATION

CLIFFORD PERHAM TINKHAM ..... Bangor

COLLEGE OF TECHNOLOGY

Bachelor of Science

IN CHEMICAL ENGINEERING

CARLETON EVERETT KILPATRICK ..... Portland
ROBERT JOSEPH LURVEY, *With High Distinction* ..... Schenectady, N. Y.
JOHN HENRY MATHEWS ..... Augusta

IN CHEMICAL ENGINEERING—PULP AND PAPER DIVISION

LAWRENCE ALLEN GRAHAM ..... South Hadley, Mass.
ALVIN SMALL MCNEILLY ..... Brookline, Mass.

IN ELECTRICAL ENGINEERING

GARFIELD MANNING ARTHUR ..... Fitchburg, Mass.

IN ENGINEERING PHYSICS

CHARLES SUMNER CUSHING, JR., *With Distinction* ..... Portland

IN MECHANICAL ENGINEERING

RICHARD MOORE BURRILL ..... Livermore Falls
WILFRED CUTLER CHESEBROUGH ..... Stonington, Conn.
RALPH HAMILTON HOPKINSON ..... Portland
GEORGE ROBERT LEAVITT ..... Bangor
RICHARD WILLARD LEMAY, *With Highest Distinction* ..... Bar Harbor
ELDON HARMON LUTHER, *With High Distinction* ..... Hartford, Conn.
ROY WINDFIELD MOORE, JR. ..... Waterville
ARTHUR HENRY MOULTON, III ..... Portland
RALPH HERSEY PEAVEY ..... Fort Dix, N. J.
ELMER VINCENT SMITH ..... Orono
CHARLES EDWIN STICKNEY, JR. ..... Portland

The following seniors who left the University for Military Service are graduated as of the class with which they entered:

AS OF THE CLASS OF 1943

CARLTON ELMORE CROSSLAND
ROBERT HARTSON DAY
CLEMENT STEVENS DUNNING
STEPHEN LEON ROBBINS
FRANK ASIA TRUE
GERALD MADISON WARD

AS OF THE CLASS OF 1944

FREDERICK THOMAS BAIRD, JR.
RICHARD MOORE BURRILL
ALBERT DAY CROCKETT, JR.
DAYSON DANIEL DECOURCY
ROBERT ERNEST FOYE
DONALD LESLIE GOODWIN
LAWRENCE ALLEN GRAHAM
RALPH HAMILTON HOPKINSON
ALFRED HUTCHINSON
CLIFFORD HARMON KEIRSTEAD
CARLETON EVERETT KILPATRICK
ELDON HARMON LUTHER
KENNETH PARKER MACLEOD
ARTHUR HENRY MOULTON, III
THOMAS FRANCIS VINCENT POWERS
CHARLES EDWIN STICKNEY, JR.
GERALD MARCUS TABENKEN
CLARKE HARRIS WERTHEIM
WILLARD HALL WHITNEY

AS OF THE CLASS OF 1945

RICHARD COURTNEY BLOOM
RAY AVERY COOK

ADVANCED DEGREES

Master of Arts

IN PSYCHOLOGY

GUY HARMON CROCKETT (B.S., New Hampshire, 1935) ..... Sebec Station
Title of Thesis: The Relationship of Laterality and Motor Skills

June 15, 1947

COLLEGE OF AGRICULTURE

Bachelor of Science

IN AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

PHILIP HAROLD ALBAIR ..... Caribou
ROBERT WELLS BRUNDAGE ..... Danbury, Conn.

BENJAMIN ARTHUR CURTIS ..... Presque Isle
JOSEPH PETER FINDLEN ..... Fort Fairfield
RICHARD FESSENDEN HARLOW ..... Hyde Park, Mass.
ALBION SETH HAYMAN ..... Brookton
ROBERT EDSON JOHNSTON ..... Easton
RICHARD EDWARD KENNEDY ..... Monmouth
AUBREY ALTON MCLAUGHLIN ..... Smyrna Mills
MERTON STACY MELOON ..... Kezar Falls
RICHARD HARDING SJOSTEDT ..... Stockholm
JOHN FRANCIS WHITTEN ..... Fort Kent

IN AGRICULTURAL ENGINEERING

RODNEY HIGGINS ALLAN ..... Orono
ALBERT KENNETH MURCH ..... South Casco

IN AGRONOMY

RAY EDWARD CORLISS, *With Distinction* ..... Sherman Mills
CLIFFORD DORIS SOUCY ..... Grand Isle
GEORGE THOMPSON, JR., *With Distinction* ..... Beverly, Mass.
JOHN PUTNAM WESCOTT ..... Patten

IN ANIMAL HUSBANDRY

MELVIN METCALF BUTLER ..... Wellesley Hills, Mass.
GERARD ALEXANDER GLASS ..... East Holden
JEAN MARIE RITCHIE ..... Trenton, N. J.
NORMAN WHITTIER ROLLINS, *With Distinction* ..... Blue Hill

IN BIOCHEMISTRY

CHARLES ROBERT ANGEL ..... Orono

IN DAIRY HUSBANDRY

HOLYOKE PURINTON ADAMS, *With Highest Distinction* ..... Melrose, Mass.
DAVID THOMAS ..... Portland

IN FORESTRY

SUMNER LAWRENCE BURGESS ..... Sangerville
STANLEY WILFORD FROST ..... Norway
LINDLEY WILLIAM GODSON ..... Bangor
RICHARD AUGUSTUS HALE, 2nd, *With High Distinction* ..... Lisbon Falls
CHARLES EDWARD HARRIS ..... Bangor
JAMES LELAND HASKELL, *With Distinction* ..... Cohasset, Mass.
ARNOLD HEDLUND ..... Belmont, Mass.
STEPHEN LORING JACOBS ..... Hingham, Mass.
HARRY RICHARD KEISER ..... Wilmette, Ill.
MALCOLM GEORGE NICHOLS ..... Orono
GEORGE ROBERT WEIDMAN ..... Providence, R. I.

IN HOME ECONOMICS

LOUISA MAE BACON, *With Highest Distinction* ..... Naples
JO-ANN JULIET BOUCHARD ..... Caribou

JACQUELINE ELIZABETH BROWN, *With Distinction* ..... Augusta
BARBARA ETHEL CONNERS ..... Old Town
CONSTANCE RUTH COYNE ..... Bangor
DOROTHY LOU DAVIS ..... Westbrook
GENEVA IRENE GIVEN HAMLIN ..... Hampden Highlands
LOIS ANN HANSON ..... Richmond
HILDA CAROLYN HASKELL ..... Dexter
RUTH ALBERTA HAYNES ..... South Waterford
JEANNE SARGENT HEARTZ ..... Bangor
AVIS ELIZABETH HUGHEY ..... East Waterboro
RACHEL WHITNEY JONES, *With Distinction* ..... Auburn
EVANGELINE ROWENA MATIJCZYK ..... Corinna
JANE ELIZABETH MORRISON ..... Biddeford
EFFIE MARIE NUTTER ..... Corinna
WINIFRED MARION PAULIN ..... Bangor
BEVERLEY PITMAN ..... Reading, Mass.
ELIZABETH MADELINE RAY ..... Ellsworth
LOIS ELIZABETH RICKER, *With Highest Distinction* ..... Portland
ESTHER LORRAINE RING ..... Richmond
FLORENCE EVELYN SAWYER ..... Portland
MARY-LOUISE ETZEL SMITH ..... Freeport
ELIZABETH ROSE SPAIN ..... New Limerick
MARGARET FRENCH SPAULDING ..... Hampden Highlands
PRUDENCE SPEIRS ..... Bangor
AMELIA LUCIE SWAIN ..... East Andover
ISABELLE ELAINE TREFETHEN, *With Distinction* ..... South Portland
BARBARA LOUISE WILLIAMS ..... Reading, Mass.
MAVIS ELENE YORK ..... Medway

IN HORTICULTURE

WAYNE STIRLING EVANS ..... Orono
OSCAR RICHARD HAHNEL, JR. ..... Lewiston
PHILIP STURDIVANT SWEETSER ..... Cumberland Center

IN POULTRY HUSBANDRY

GURDON SALTONSTALL BUCK, *With Highest Distinction* ..... Naples
WALTER HERBERT FOSTER, JR. ..... Old Town
STANLEY BARTLETT SMITH ..... Bryant Pond

IN WILDLIFE CONSERVATION

LYNDON HERRICK BOND ..... Bangor
ARTHUR ALEXANDER DAVIS ..... Springfield
ROBERT TIFFANY GROTEFEND ..... West Englewood, N. J.
WILLARD THOMAS JOHNS, JR. ..... Maplewood, N. J.
HARLAN SYLVESTER SPEAR ..... Warren
PARKER SCOTT TREFETHEN ..... Wilton
WALTER RAYNES WELCH ..... Rumford

COLLEGE OF ARTS AND SCIENCES

Bachelor of Arts

IN BUSINESS ADMINISTRATION

HAROLD SIDNEY AVERY, JR. ..... Bath
MELVIN JONATHAN BARTLETT ..... East Stoneham
WILLIAM HENRY BRANN ..... Gardiner
IRVING SEYMOUR BRODER, *With Distinction* ..... Bangor
ROBERT ROGERS CHAPLIN ..... East Sebago
DONALD ERWIN CROSSLAND, *With Distinction* ..... Orono
WILLIAM MACADAM DOW ..... Old Town
MARK PETER EMERY ..... Bangor
EUNICE ELIZABETH HAMMOND, *With High Honors* ..... Farmington
PHYLLIS ARLENE JORDAN ..... South Portland
LLOYD GEORGE NILES ..... Houlton
MADELINE HURD PINE ..... Rockland
ALBERT SIMON POVICH ..... Bath
DONALD FRANKLYN PRESNELL ..... Portland
THOMAS STOW RANNEY ..... Orono
CHARLES CECIL ROWLEY, III ..... Summit, N. J.
ALPHEUS SANFORD, *With Distinction* ..... Brunswick
MARY LOUISE SAWYER ..... Saco
MARJORIE EDITH SEELY ..... Patten
EDWARD WESLEY SIMS ..... Pawtucket, R. I.
ROBERT DALE SMITH ..... Bangor
BRET MARTIN STANDISH ..... Baldwin, N. Y.

IN CHEMISTRY

BARBARA LOUISE CROWELL ..... Ludlow, Mass.

IN ECONOMICS

MARIAN HARRIS COMSTOCK ..... Millinocket
DORIS JEAN FORAN, *With Distinction* ..... Saco
PAUL FOSTER MCGOULDRICK, JR., *With Highest Honors* ..... Bangor
KATHRYN JOYCE MILLS ..... Monticello
WILLARD EVERETT PIERCE, JR. ..... Portland
YVETTE BERNADETTE PLENT ..... Bangor

IN ENGLISH

ALYCE FREDERICKA AMBORN ..... Lincolnville
RENA BELL ..... Bangor
MALCOLM HINCKLEY BLODGETT ..... West Brooksville
IRENE MAE CAMPBELL ..... Gouldsboro
CONSTANCE FLANDERS CRATTY ..... Bangor
CECILY MARY JOHNSON ..... Livermore Falls
ELIZABETH BROWN LITTLEFIELD ..... Brooks
JANE ELIZABETH LONGFELLOW ..... East Machias
MORRIS GOLDEN PILOT ..... Bangor
EDITH JEANNETTE STROUT ..... Bangor

STANLEY WHITAKER THOMAS ..... Gorham
DOROTHY ELOISE WARD ..... Searsport
ANNE BAILEY WOODS, *With Distinction* ..... Ellsworth

IN FRENCH

JANICE BROWN ..... Natick, Mass.
CONSTANCE CLARKE CAMPBELL ..... Auburn

IN GEOLOGY

KURT EDWARD AUGUST BIEHL ..... Baltimore, Md.
ROMAINE FAYE LITTLEFIELD ..... Bangor

IN GERMAN

DOROTHEA DUNN BETTS ..... Bangor
MURIEL ELAINE POLLEY, *With High Distinction* ..... Portland

IN GOVERNMENT

ROBERT LINWOOD CLAYTON ..... Ashland

IN HISTORY

PETER JOHN BRADSHAW ..... Bangor
KATHLEEN YVONNE BRIDGES ..... Calais
ROBERT EARL MACKENZIE ..... Orono
CHARLES LAURENCE PARKIN ..... Portland
DANA TRASK WHITMAN ..... Bangor

IN HISTORY AND GOVERNMENT

ALEXANDER MACLEOD ADAMS ..... Camden
HAROLD ROSCOE ALLEY ..... Calais
ROBERT OTIS BROKAW ..... Plainfield, N. J.
EDWARD JOHN FALARDEAU ..... Rumford
PAULINE MARIE GILSON ..... South Portland
PHILLIS MARILIN HAMMOND ..... Portland
GILBERT LOUIS O'CONNELL ..... Bangor
GERALDINE FRANCES SMALL ..... Guilford
HAZEL PRISCILLA STARRETT ..... Friendship
CLEMENT ELLERY VOSE ..... Houlton

IN LIBERAL ARTS AND NURSING

MARGARET EVANGELINE COUSINS ..... East Millinocket
MADELINE JOYCE ELLINGWOOD ..... Madison
SHIRLEY EDNA HAINES ..... Fort Fairfield
ARLENE FRANCES MILLETT ..... Vanceboro
WINIFRED RAE MOORE ..... Bridgton
STARR ROCKWELL ROBERTS ..... Orono
MARY ELLEN SMITH ..... Indian Lake, N. Y.
MARILYN DOROTHY TOBIE ..... Lisbon Falls
LUCY MAY WILLIAMS ..... South Brewer

IN MATHEMATICS

Roy Wellington Barstow, Jr. ..... Brewer
Stella Jennie Borkowski ..... Stillwater
Nora Elizabeth Chipman ..... Poland Spring
John Russell Clark ..... Kennebunkport
George Edward McLean ..... Bangor
Elizabeth Louise White ..... Reading, Mass.
Harriet Elizabeth Woodsum ..... Old Town

IN MODERN LANGUAGES

Elizabeth Benedict Leith ..... Machiasport

IN MUSIC

Ruth Elizabeth Boerker ..... Kingston, N. Y.
Dorothy Jane Needham ..... Old Town
Arline Bernice Tankle ..... Lewiston

IN PHYSICS

Elizabeth Adele Kelso ..... Portland

IN PSYCHOLOGY

Jean Shirley Ackley ..... Hampden Highlands
Joan Mary Ambrose ..... Bangor
Mary Margaret Boynton ..... Millinocket
Dorothy May Bruns, *With Distinction* ..... Bangor
Shirley Reed Castner, *With Distinction* ..... Bangor
Arlene Marjorie Cleven, *With High Honors* ..... Portland
Betty Jane Durgin ..... Bingham
Phyllis Louise Eldridge ..... South Portland
Catherine Frances George ..... Washington, D. C.
Marguerite Raymond Googins ..... Westbrook
Lois Ann Hovey, *With High Distinction* ..... Island Falls
Fay June Jones ..... Bangor
Ora Louise MacDonald ..... Brewer
Barbara Colleen MacNair ..... Houlton
Janice Annette Maxwell ..... Hamden, Conn.
Josephine Clark Meloon ..... Brownville Junction
Shirley Ann Sibley Morrow ..... Orono
Georgia Frances Parsons ..... Auburn
Sylvia Ellen Pendleton ..... Carmel
Allen Heirsch Solomon ..... Lowell, Mass.
Vaughn Raymond Sturtevant, *With Distinction* ..... Livermore Falls
Valerie Mary Ann Varaneckis ..... Lewiston
Barbara Lucille Weick ..... Presque Isle
Evelyn Mary White ..... West Bath
Barbara Ann Woodfin ..... Marblehead, Mass.

IN ROMANCE LANGUAGES

Helen Fortunes ..... Sanford
Inez MacKinnon ..... Brewer

IN SOCIOLOGY

MILDRED COHEN ..... Portland
EVELYN DELIA FOGG ..... Norridgewock
BARBARA ELLEN MCNEIL, *With High Distinction* ..... Orono
JOSEPHINE NANCY MACRI ..... Portland
BEVERLY PACKARD ..... Bath
FLORENCE MAILLOR SMITH ..... Orono
MARYROSE ANNE SMITH ..... Bucksport
WALTER EDWARD WYMAN ..... Brewer

IN SPANISH

PHYLLIS CARTER PENDLETON, *With Highest Distinction* ..... Caribou

IN SPANISH AND THEATRE

BARBARA LOUISE MILLS ..... Bangor

IN SPEECH

WILLIAM SMARDON BROWN ..... Portland
RALPH M. HIGGINS ..... East Machias
ROBERT HAMPDEN PATTEN ..... Hampden Highlands
JOHN COGGIN WELLINGTON ..... Manset

IN THEATRE

ELIZABETH CLEMENT ..... Portland
JOYCE ELIZABETH FAULKNER ..... Ellsworth
LALA LAMBRIGHT JONES ..... Auburn
ELIZABETH JANE LEHMAN ..... St. Louis, Mo.
JEANNETTE LOUISE NADEAU ..... Brewer
SARALYN KNOWLTON PHILLIPS ..... Portland
DOROTHY VIOLA SALO ..... Union

IN ZOOLOGY

WALTER CALVIN BROOKS ..... Rumford
JOHN HAYDEN CLEMENT ..... Bangor
ANNA MARGARET CROUSE ..... Dexter
RICHARD FERNAND DESJARDINS ..... Auburn
CLARICE ALMENA EASLER ..... Crouseville
GLADYS FRIEDLER, *With High Distinction* ..... Lewiston
ROBERT FASSETT GRUMLEY ..... Millinocket
THOMAS ALFRED HARRINGTON ..... Worcester, Mass.
WILLIAM ERNEST HILL ..... Newton Centre, Mass.
BEVERLY JANE KEMP ..... Auburn
JOYCE MARIE MARSH ..... Guilford
STORER SHERMAN PARSONS ..... Presque Isle
ELEANOR MARY PERKINS ..... Saco
RAMONA BERNADINE SIMPSON ..... Sanford

SCHOOL OF EDUCATION

Bachelor of Arts in Education

Evelyn Elaine Foster ..... Bangor

Bachelor of Science in Education

Lewis Jonathan Birt ..... East Millinocket
Robert Perry Brown ..... Madison
Lou May Buker ..... Hallowell
Shirley Anna Carle ..... Princeton
Gene Peter Ciarrocchi ..... East Millinocket
Melvin Hubert Coons ..... Woodland
Warren Cony Curtis ..... Kingfield
Edith May Dick ..... Long Island
Grace Luscombe Dodge ..... Boothbay
Ruth Eleanor Dole ..... Bangor
Reginald Harvard Dority ..... Princeton
Alvah Phillips Ford ..... Bangor
Erwin Ames Gallagher ..... Old Town
Herbert Grey Gillis ..... Calais
Arthur Joseph Grant ..... Bangor
Alberta Alice Haines ..... Woodland
Clinton Austin Hanscom ..... Bangor
Philip Glendon Hines ..... North Anson
Doris Ada Hobart ..... Princeton
Howard Hazen Hunnewell ..... Topsfield
Elizabeth Loring Jones ..... Newtonville, Mass.
Morgan Eugene Kendrick ..... Bangor
Elizabeth Wiggin King ..... Ellsworth
Louise Lathbury ..... Augusta
Eulila Chase Ludden ..... Old Town
Muriel Anne McAllister ..... Augusta
Grover Bert MacLaughlin ..... Stillwater
Eugene Alberto Mawhinney ..... Jonesboro
Robert William Mealey ..... Bangor
Thornton Whitney Moore ..... Pittsfield
Ray Edward Oliver ..... Houlton
Clayton Merle Packard ..... North New Portland
Vernon Eugene Pettigrew ..... Machias
Priscilla Ann Roberts ..... Bangor
Darrol Elwood Robinson ..... Auburn
Ray Freemont Rollins ..... Fort Fairfield
Gertrude Florence Spires ..... Calais
Gordon Robert Staff ..... Richmond Hill, L. I., N. Y.
Thomas Stotler ..... Orono
Lawrence Marvin Sturtevant ..... North Belgrade
George Coakley Swanton ..... Dexter
Julian Page Thompson ..... Bangor
Charles Winston Webb ..... Norridgewock
Helen Esther Whitney ..... Farmington

CAROLYN SELMA WIEDEN ..... Waterville
ELAINE FRANCES WILSON ..... Milbridge

Bachelor of Science in Education

IN COMMERCIAL EDUCATION

VAUN ELIZABETH DOLE ..... Portland
STORA WILLIAM EMMETT ..... Old Town
FRANCES ROBERTS GLOVER ..... Orono
ANDREW MARCELLUS LAUGHTON ..... Brewer
HALBERT SEELEY STEVENS ..... Portage Lake

COLLEGE OF TECHNOLOGY

Bachelor of Science

IN CHEMICAL ENGINEERING

RAYMOND HYMERS ATWOOD ..... Bangor
EDWARD RICHARD HAYES ..... Lewiston
HARVEY LESTER HOLBROOK ..... Yarmouth
HUGH TERENCE HOLLAND ..... Bangor
STANLEY ALLEN MURRAY, *With Highest Distinction* ..... Rockland
ROBERT WILLIAM NELSON ..... Attleboro, Mass.
JOSEPH RAYMOND O'NEIL ..... Portland
ROBERT FRANCIS ROY ..... Norway
MAHLON DORRANCE SMITH ..... Yarmouth

IN CHEMICAL ENGINEERING—PULP AND PAPER DIVISION

JEAN GEORGE HUFNAGEL ..... Baldwin, L. I., N. Y.
CHARLES ALTON MARKEE ..... Calais

IN CHEMISTRY

JAMES LINTON MORRISON ..... Southbridge, Mass.
FLORENCE LOUISE PALMER, *With High Distinction* ..... Wales
ROBERT CARLYLE PETTERSON ..... Bangor
BURTON LEWIS WILNER ..... Bangor

IN CIVIL ENGINEERING

HOWARD DELANO BARTLETT ..... Damariscotta Mills
WILLIAM EDMUND BROOKS ..... Rumford
WALTER EASTMAN BROWN, JR. ..... Orono
HERBERT RUSSELL CHAMPION ..... Anson
CHARLES VAUGHN CHAPMAN, JR. ..... Augusta
JOSIAH EDWARD COLCORD, JR., *With Distinction* ..... South Portland
WILLIAM HENRY CONDON ..... Newport
WILLIAM JOSEPH CULLEN ..... Auburn
JOSEPH HAROLD DONDIS ..... Rockland
LESTER FULLER GROSS ..... Camden
MALCOLM DAVID HARDY ..... Bangor
WILLIAM POWER HAYES ..... Brewer

ARMAND WILFRED JALBERT ..... Spencer, Mass.
ARTHUR DEWEY MOODY ..... Waldoboro
GEORGE HANSON OBEAR ..... Calais
ARMAND ROGER PAQUETTE ..... Manchester, N. H.
ERNEST ARTHUR SHERMAN ..... Lancaster, N. H.
PHILIP DAVIS SPILLER ..... Westbrook
EDWIN MORTON THAYER ..... Sanford
JOHN PHILLIP THERIAULT ..... Old Town

IN ELECTRICAL ENGINEERING

GEORGE FRANCIS BAGLEY ..... Orono
LESLIE CLARENCE BREWER ..... Bar Harbor
DUDLEY EDGAR DAVIS ..... Hopedale, Mass.
ROBERT MARSHALL HAGGETT ..... Portland
ROBERT MARSH HOOVER ..... Gorham
THOMAS ARTHUR MURRAY, JR., *With Distinction* ..... Hampden Highlands
JOSEPH HENRY NADEAU, JR. ..... Fort Kent
GLENDON RUSSELL PORTER ..... South Portland
ERLE BINGHAM RENWICK, JR. ..... Portland
HECTOR ARTHUR THIBEAULT ..... Skowhegan

IN ENGINEERING PHYSICS

ARCHIE RAYMOND CLARK ..... Millinocket
CHARLES FRANCIS CROCKER, *With High Distinction* ..... Centerville, Mass.
ROBERT FRANCIS CUSHMAN ..... South Portland
JENNESS PEARL EUGLEY ..... Orono
WILLIAM TERENCE HINCKLEY ..... Bangor
HENRY WALTER HONEYMAN, 3rd ..... Riverside, R. I.
CHARLES LINCOLN JEWETT ..... Brookline, Mass.
NICHOLAS HARRY JOHNS, *With Distinction* ..... Portland
ROBERT HALEY PARMENTER, *With Highest Distinction* ..... Portland
LOWELL SAVAGE ..... Bangor

IN GENERAL ENGINEERING

JOSEPH BENJAMIN CHAPLIN, JR. ..... Bangor
GARRETT DEFORREST SPEIRS, JR. ..... Bangor

IN MECHANICAL ENGINEERING

CHARLES LIDSTONE CARPENTER ..... Bangor
WILLIAM CHESWORTH, JR. ..... Milton, Mass.
BAYARD MORSE CRONKHITE ..... Cambridge, Mass.
FRANCIS HAMILTON FARNUM, JR. ..... Augusta
GERALD ROSCOE GARVIN ..... Springvale
BENJAMIN FRANKLIN HODGES, JR. ..... Reading, Mass.
MALCOLM PORTER HOLDEN ..... West Hartford, Conn.
HARRY SAUNDERS HOPKINS ..... Bangor
FREDERICK SAWTELLE JONES, JR., *With Distinction* ..... Stamford, Conn.
EARL RANDALL KINGSBURY ..... Bangor
LEONARD RICHARD KOROBKIN, *With Distinction* ..... Lowell, Mass.

MELVIN ERNEST LIBBY ..... Westbrook
EVERETT OSCAR MORRISON ..... Sanford
ROBERT HOMER PAGE ..... Bucksport
NORMAN ARMSTEAD PUTNAM ..... Reading, Mass.
GEORGE J. WALLINGFORD, JR. ..... Auburn
KERMIT BLANCHARD WILSON ..... Orono

ADVANCED DEGREES

Master of Arts

IN ECONOMICS

NORMAN WILLIAM MOSHER (B.A., Maine, 1943) ..... Belfast
Title of Thesis: International Cartels:
Their Organization and Policies

IN EDUCATION

WILLIAM GILMAN GLOVER (B.A., Bowdoin, 1943) ..... Dover-Foxcroft
Title of Thesis: Proposals for Secondary School
Curricular Improvement by Consolidation in
Southern Piscataquis County

ALBERT ROY MORTON (B.S. El. Ed., Gorham Teachers, 1942) ..... Friendship
Title of Thesis: A History of Gorham State
Teachers College

LAWRENCE EDWARD STANDISH (B.S. in Ed., Maine, 1947) ..... Cranberry Isles
Title of Thesis: A Project in the Social Studies:
An Experimental Method of Teaching United States History
through the Medium of a Study of the Economic and
Social Background of the Constitution and Its Amendments

RITA FRANCES TORREY (B.S. in Ed., Maine, 1943) ..... Cherryfield
Title of Thesis: A Guidance Program in Reading
for Junior High School

IN ENGLISH

JANE CROWELL (B.A., Mount Holyoke, 1944) ..... Bangor
Title of Thesis: A Study of the Later Plantagenet
Rule (1272-1399) as Material for English Drama

CHARLOTTE IRMA DAVIS (B.A., Maine, 1937) ..... Milford
Title of Thesis: Social Backgrounds of Chaucer's
Treatment of Marriage

ADA CATHERINE MINOTT (B.A., Maine, 1945) ..... Phippsburg
Title of Thesis: Eugene O'Neill and the Critics:
A Study of Critical Opinion Concerning the Works of
America's Foremost Dramatist

ALICE ELIZABETH ROBERTSON (B.A., Wellesley, 1943) ..... Orono
Title of Thesis: A Biographical Study of
George Lyman Kittredge

JOHN EDWARD WATSON (B.S., Fordham, 1937) ..... Orono
Title of Thesis: Charles Morton: Tutor to Daniel Defoe

IN PSYCHOLOGY

JOHN JESSEMAN DICKINSON (A.B., Bowdoin, 1945) ..... Orono
Title of Thesis: Fathers of Delinquent Boys

MASTER OF SCIENCE

IN AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

ALVAH LIONEL PERRY (B.S., Maine, 1942) ..... Orono
Title of Thesis: Costs of Distributing Milk in Maine Markets

CARROLL BARTON RICHARDSON (B.S., Maine, 1946) ..... Oakland
Title of Thesis: A Study of Fresh Vegetables Used by Sporting Camps, Summer Hotels, and Boys and Girls Camps in Maine

HOMER CLAY WOODWARD (B.S., Maine, 1942) ..... Brewer
Title of Thesis: A Study of the Distribution of Maine Potatoes, 1930 to 1945

IN ANIMAL INDUSTRY

STUART HAMILTON PERKINS (B.S., Maine, 1943) ..... Kennebunkport
Title of Thesis: A Comparison of Late and Early Lambing Under Maine Conditions

IN CHEMICAL ENGINEERING

BURT EUGENE BATES (B.S., Maine, 1944) ..... Hodgdon
Title of Thesis: The True Dielectric Breakdown Strength of Electric Cable Insulating Papers

LAURENCE GILMORE LEAVITT (B.S., Maine, 1942) ..... Orono
Title of Thesis: The Removal of Colored Impurities from Some State of Maine Clays

HARRY DANIEL MCNEIL, JR. (B.S., Bowdoin, 1945) ..... Bangor
Title of Thesis: Determination of the Form of Nitrogen in the Combustion Gases of Ammonium Sulfite Waste Liquor

DONALD EUGENE MARRINER (B.S., Maine, 1942) ..... Rockland
Title of Thesis: The Solubility of Sulfur Dioxide in Ammonium Bisulfite Solutions

GEORGE LEONARD NYSTROM (B.S., Maine, 1941) ..... Orono
Title of Thesis: An Investigation of Sulphite Semi-Chemical Pulping of Chip Screenings

IN CIVIL ENGINEERING

RUSSELL SEAVEY BODWELL (B.S., Maine, 1946) ..... Portland
Title of Thesis: A Preliminary Report of Frost Action on Culverts (Joint thesis with Sherman King Smith)

SHERMAN KING SMITH (B.S., Maine, 1946) ..... Gardiner
Title of Thesis: A Preliminary Report of Frost Action on Culverts (With Russell Seavey Bodwell)

IN PHYSICS

JOHN JAMES MURPHY (B.S., Holy Cross, 1941) ..... Danbury, Conn.
Title of Thesis: An Investigation of the Molar Refraction of Carbon Dioxide Gas as a Function of Density, Using the Displacement Interferometer

IN PULP AND PAPER TECHNOLOGY

HSIOH-WU WANG (B.Sc., Shanghai, 1938) ..... Shanghai, China
Title of Thesis: An Investigation of Pulping Potato Tops

Master of Education

REGINALD FAIRFAX DODGE (B.S. El. Ed., Gorham Teachers, 1940) ..... Orono
Title of Paper: Education of the Mentally Retarded in Maine

ADELBERT FOSS, JR. (B.S. El. Ed., Gorham Teachers, 1940) ..... Cumberland Mills
Title of Paper: Status of Music Instruction in Maine Schools

LEE VIVIAN HALLOWELL (B.S. in Ed., Boston University, 1939) ..... Bucksport
Title of Paper: An Investigation of Elementary-Secondary School Per Capita Costs

LLOYD DOUGLAS HATFIELD (B.S. in Ed., Maine, 1937) ..... South Brewer
Title of Paper: A Proposed Constitution for a Maine High School Athletic Association

WILLIAM LLOYD IRVINE (B.A., Maine, 1942) ..... Framingham, Mass.
Title of Paper: A Study of Student Accounting Programs in Fifty Representative Secondary Schools of Maine

ERROLD GORDON JONES (B.S. in Ed., Maine, 1937) ..... Brownville
Title of Paper: Annotated Bibliography of Historical Fiction Which May Be Used in the Teaching of the Colonial and Revolutionary Periods of American History

ROGER FRANKLIN LUCE (B.S. in Ed., Maine, 1946) ..... Hampden Highlands
Title of Paper: A History of the Schools in Newburgh, Maine

JAMES ALLAN MCLEAN, JR. (B.S. in Ed., Maine, 1938) ..... Bangor
Title of Paper: A Survey of Audio-Visual Education in Bangor, Maine, with Recommendations for Improvement

MARGUERITE DOW MCNEIL (B.S. in Ed., Maine, 1946) ..... Orono
Title of Paper: A Survey of the Supervisory Techniques Used in the Elementary Schools of Penobscot County, Maine

LILLIAN ROBERTA MICHAUD (B.S. in Ed., Maine, 1947) ..... Fort Kent
Title of Paper: A Study of Pupil-Personnel Records in the Small Secondary School

EINAR ARTHUR OLSEN (B.S., Maine, 1946) ..... Gloucester, Mass.
Title of Paper: An Intramural Program for a Medium-Sized High School in Maine

EDWARD ARLINGTON RACE (B.S. El. Ed., Gorham Teachers, 1940) ... East Boothbay

Title of Paper: A Unit in Trigonometry Correlated with Topics in Algebra and Geometry
ROBERT FRANKLIN WATSON (B.S. in Ed., Washington and Jefferson, 1941) ..... Portland
Title of Paper: A Proposed Program in Physical Education for High School Boys

CERTIFICATE

IN THE TWO-YEAR COURSE IN AGRICULTURE

RALPH DANIEL BLANCHARD ..... Auburn
MARION FRANKLIN MURPHY, JR. ..... South Berwick
ROBERT EARL SMITH ..... Dixmont

GENERAL HONORS

These graduation Honors, marking the completion of the Honors Program and constituting the highest award conferred by the College of Arts and Sciences, represent distinguished work done under tutorial guidance and the writing of a thesis of high quality. They have been awarded this year to the following students:

ARLENE MARJORIE CLEVEN	*With High Honors*
EUNICE ELIZABETH HAMMOND	*With High Honors*
PAUL FOSTER MCGOULDRICK, JR.	*With Highest Honors*

The following seniors who left the University for Military Service are graduated as of the class with which they entered:

Class of 1942

Walter Eastman Brown, Jr.
Malcolm George Nichols

Class of 1943

Edward John Falardeau
Walter Herbert Foster, Jr.
James Linton Morrison
Erle Bingham Renwick, Jr.
Robert Francis Roy
Bret Martin Standish
George Robert Weidman
Kermit Blanchard Wilson

Class of 1944

Holyoke Purinton Adams
Charles Robert Angel
George Francis Bagley
Leslie Clarence Brewer
Irving Seymour Broder
William Smardon Brown
Robert Wells Brundage
Melvin Metcalf Butler
Charles Vaughn Chapman, Jr.
William Chesworth, Jr.
Josiah Edward Colcord, Jr.
William Henry Condon
Charles Francis Crocker
William Joseph Cullen
Benjamin Arthur Curtis
Dudley Edgar Davis
Joseph Harold Dondis
Wayne Stirling Evans
Francis Hamilton Farnum, Jr.
Joseph Peter Findlen
Gerald Roscoe Garvin
Lester Fuller Gross
Robert Tiffany Grotefend
Oscar Richard Hahnel, Jr.
Edward Richard Hayes
Albion Seth Hayman
Benjamin Franklin Hodges, Jr.
Malcolm Porter Holden
Jean George Hufnagel
Stephen Loring Jacobs

Class of 1944

Frederick Sawtelle Jones, Jr.
Earl Randall Kingsbury
Melvin Ernest Libby
Robert Earl MacKenzie
Aubrey Alton McLaughlin
George Edward McLean
Merton Stacy Meloon
Everett Oscar Morrison
Lloyd George Niles
George Hanson Obear
Joseph Raymond O'Neil
Donald Franklyn Presnell
Norman Armstead Putnam
Norman Whittier Rollins
Edward Wesley Sims
Robert Dale Smith
Stanley Bartlett Smith
Allen Heirsch Solomon
Philip Davis Spiller
Gordon Robert Staff
Thomas Stotler
Philip Sturdivant Sweetser
David Thomas
George Thompson, Jr.
John Putnam Wescott
John Francis Whitten

Class of 1945

Harold Roscoe Alley
Robert Otis Brokaw
Walter Calvin Brooks
Gurdon Saltonstall Buck
Donald Erwin Crossland
William Ernest Hill
Robert William Nelson
Richard Harding Sjostedt
Garrett DeForrest Speirs, Jr.
Vaughn Raymond Sturtevant

Class of 1946

Philip Harold Albair
John Hayden Clement
Storer Sherman Parsons
Albert Simon Povich

HONORARY DEGREES

Stephen A. Cobb	Doctor of Science
Robie Lawton Mitchell	Doctor of Laws
Ruth Moore	Doctor of Letters
Eva Pratt Owen	Master of Arts
John Crawford Parlin	Master of Science
Marcus Libby Urann	Doctor of Laws
Fred Hale Vose	Doctor of Engineering
Arthur Cutts Willard	Doctor of Laws

August 28, 1947

Master of Arts

IN EDUCATION

Charles Frederick Martin (B.S., Colby, 1930) ..... Eliot
Title of Thesis: A Study of Programs of Agricultural Education in Secondary Schools With Special Reference to the Needs of the State of Maine

Mary Louise Reid (B.S. in Ed., Maine, 1945) ..... Bangor
Title of Thesis: Teaching Reading to the Slow-Learning Child Through the Use of a Puppet Named Oswald

IN ENGLISH

Lloyd Wilfred Griffin (B.A., Maine, 1941) ..... Bradford, Mass.
Title of Thesis: Selected Letters of Richard Henry Dana, Jr. (1815-1882)

Rachel Reed Griffin (B.A., Rochester, 1943) ..... Vanceboro
Title of Thesis: The Life and Writings of Mary Hayden Green Pike

IN PSYCHOLOGY

Donald Brown Devoe (B.A., Maine, 1941) ..... Bangor
Title of Thesis: A Comparison of the Performance of Young Adults on Certain Intelligence Tests with the Test Performance of the Same Individuals when Children

Master of Science

IN CHEMISTRY

Albert Kendall Sawyer (A.B., Colby, 1940) ..... New Sharon
Title of Thesis: Dry Chlorination of s-Trithiane

Master of Education

Frances Catherine George (B.S. in Ed., Wilson Teachers, 1942) ..... Washington, D. C.
Title of Paper: A survey of the Program for Exceptional Children at the Elementary Level in Washington, D. C.

CLYDE ELWOOD RILEY (A.B., Colby, 1927) ..... Westboro, Mass.
Title of Paper: A Preferred List of Selected Films and Filmstrips for Teaching High School Sciences in Westboro, Massachusetts

ALBERT LEROY SKIDDS (A.B., Colby, 1933) ..... Calais
Title of Paper: A Proposal to Implement the Use of Motion Pictures in East Corinth Academy

October 2, 1947

Master of Arts

IN ECONOMICS

JENNIE MESERVE JOHNSON (B.A., Maine, 1944) ..... Bangor
Title of Thesis: Labor Legislation in Maine Since 1907

IN EDUCATION

FLORENCE ELLA BOONE (B.S. in Ed., Maine, 1944) ..... Calais
Title of Thesis: Chronicles of Calais and Vicinity, Part II

MARY PRISCILLA BOONE (B.S. in Ed., Maine, 1944) ..... Calais
Title of Thesis: Chronicles of Calais and Vicinity, Part I

LEO BRADLEY BUNKER, JR. (B.S. in Ed., Maine, 1946) ..... Franklin
Title of Thesis: A Program of Highway Safety for the Secondary Schools of Maine

EDITH DOREEN GREGORY (B.S. in Ed., Maine, 1946) ..... Calais
Title of Thesis: Handwork as an Instrument of Guidance in the Elementary School

NATHAN WILLIAM WHITE (B.S. in Ed., Maine, 1935) ..... Presque Isle
Title of Thesis: From Fedala to Berchtesgaden—A History of the Seventh United States Infantry in World War II

IN HISTORY AND GOVERNMENT

LINWOOD SHAW ELLIOTT (B.A., Maine, 1932) ..... Portland
Title of Thesis: The Militia System and Policies of Maine

DONALD TENNYSON SPARKS (A.B., Maine, 1940) ..... York Village
Title of Thesis: Consular Relations of Major General Benjamin F. Butler at the Port of New Orleans in 1862

IN PHILOSOPHY

GERALD ENGEL (A.B., Yeshiva, 1940) ..... Bangor
Title of Thesis: The Phaedo of Plato and of Mendelssohn, a Comparison of Their Theories of Immortality

Master of Science

IN CHEMICAL ENGINEERING

SHU-TANG HAN (B.S., National Tsing Hua, 1937) ..... Shanghai, China
Title of Thesis: The Absorption of Sulfur Dioxide in Dilute Hydrochloric Acid

IN ELECTRICAL ENGINEERING

JOHN NOLAN POWERS (B.S., Maine, 1943) ..... Medway
Title of Thesis: A Study of the Amplidyne Generator

Master of Education

ERVIN ALEXANDER ARBO (B.S. in Ed., Maine, 1940) ..... Old Town
Title of Paper: A Suggested Curriculum Revision for the Small Secondary School

MADALENE BRACKETT (B.A., Maine, 1925) ..... Milo
Title of Paper: A Statistical Study of the Effect of Forewarning of Examination Upon High School Students

HORACE ALCANDER CROXFORD (B.A., Maine, 1930) ..... Old Town
Title of Paper: Attendance—A Survey of the Literature Relating to the Causes of Absence in Schools and Suggestions for Improving Attendance

FRANK EDWARD DORR (B.A., Bates, 1925) ..... Freeport
Title of Paper: Distributive Education

LAWRENCE WENDELL DWYER (B.A., Colby, 1938) ..... Millinocket
Title of Paper: The Supervisory Function of the High School Principal

LOUISE FORD FETTINGER (B.S., Russell Sage, 1920) ..... Saco
Title of Paper: Criteria Designed for Use in Cooperative Evaluation of Home Economics Departments, Teachers, and Programs

WALLACE FRED GLEASON, JR. (B.S., Maine, 1938) ..... Neptune City, N. J.
Title of Paper: A Study of the Content of a Course in General Mathematics in Secondary Education

RICHARD ALCORN GOODRIDGE (B.S. in Ed., Gorham Teachers, 1940) ..... Orono
Title of Paper: A Study of Certain Financial Aspects of the Present Teacher Shortage in the Public Schools of Maine

EVELYN BERTHA KNIGHT (B.S., Farmington, 1937) ..... East Orange, N. J.
Title of Paper: A Study of the Causes of Racial Friction as Represented in the Detroit, Beaumont, and Harlem Outbreaks

FRANK WILLIAM MYERS (B.A., Maine, 1935) ..... Old Town
Title of Paper: The Home Room

MARY KATHERINE PERRY (B.A., Maine, 1936) ..... Orono
Title of Paper: A Study of Secondary School Mathematics Programs of the Small Schools in Maine

MILFORD GEORGE SAWYER (B.S. in Ed., Maine, 1945) ..... Presque Isle
Title of Paper: The Unit Method of Teaching (Discussion and Example)

ALBERTA RYAL TOOTHAKER (B.S., Farmington, 1937) ..... Orrington
Title of Paper: Some Audio-Visual Aids to be Used in the Home Economics Program for the 10th, 11th, and 12th Grades at Bucksport High School

PERRY GILBERT WORTMAN (B.S., Colby, 1933) ..... Boothbay Harbor
Title of Paper: Cooperative Planning for Curriculum Revision at Boothbay Harbor, Maine, High School

Summary of Student Enrollment

Summer and Fall 1947

			Men	Women	Total
Graduates			89	23	112
Seniors			463	164	627
Juniors			727	163	890
Sophomores			1554	178	1732
Freshmen			42	—	42
New Freshmen	Orono Campus	187			
	Brunswick Campus	865	1052	210	1262
Specials	Orono Campus	53			
	Brunswick Campus	1	54	11	65
Three-Year Nurses			—	40	40
Two-Year Agriculture—1st Year			29	—	29
2nd Year			24	—	24
			4034	789	4823
Summer Session			330	453	783
Post Session and Secretary's Workshop			81	259	340
Grand Total (omitting duplicates in Summer Session, Post Session and Workshop)			4361	1471	5832

Classification by Colleges

Graduates	89	23	112
College of Agriculture	783	173	956
College of Arts and Sciences	1484	544	2028
College of Technology	1593	16	1609
School of Education	85	33	118
	4034	789	4823

Candidates for Degrees

Graduates	85	21	106
College of Agriculture	721	171	892
College of Arts and Sciences	1472	498	1970
College of Technology	1562	15	1577
School of Education	83	31	114
	3923	736	4659

Classification by Residence

Maine, by counties	Regular Session	Summer Session	Post Session	Total
Androscoggin	289	14	4	307
Aroostook	307	39	33	379
Cumberland	672	35	20	727
Franklin	74	9	1	84
Hancock	174	33	14	221
Kennebec	306	42	22	370
Knox	110	15	11	136

Lincoln	63	9	6	78
Oxford	177	13	8	198
Penobscot	1208	145	61	1414
Piscataquis	90	17	9	116
Sagadahoc	156	32	24	212
Somerset	82	15	12	109
Waldo	86	28	9	123
Washington	151	32	16	199
York	255	11	9	275
	4200	489	259	4948

	Regular Session	Summer Session	Post Session	Total
Maine	4200	489	259	4948
Massachusetts	343	38	38	419
New York	92	39	1	132
Connecticut	52	19	4	75
New Jersey	43	23	4	70
Pennsylvania	13	16	5	34
New Hampshire	13	4	4	21
Maryland	7	10	—	17
Rhode Island	11	4	—	15
Florida	4	6	—	10
Michigan	2	7	—	9
Virginia	3	6	—	9
Ohio	3	3	—	6
Vermont	6	—	—	6
District of Columbia	3	1	1	5
Minnesota	—	4	—	4
Delaware	1	2	—	3
Illinois	1	2	—	3
South Carolina	—	3	—	3
Texas	—	2	1	3
California	1	1	—	2
Indiana	1	1	—	2
Iowa	—	2	—	2
Kentucky	—	2	—	2
North Carolina	1	1	—	2
Nebraska	—	1	—	1
Tennessee	—	1	—	1
Washington	1	—	—	1
Canada	8	2	—	10
China	3	2	—	5
India	3	—	—	3
Greece	2	—	—	2
Alaska	—	1	—	1
Argentina	1	—	—	1
Brazil	1	—	—	1
Mexico	1	—	—	1
Norway	1	—	—	1
Pakistan	1	—	—	1
Venezuela	1	—	—	1
	4823	692	317	5832

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